FORMATION AND USE OF A CONSIDERATION SET:
IMPLICATIONS FOR MARKETING AND RESEARCH ON CONSUMER CHOICE

By

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I have finished! For me these words have never before been accompanied by such intense emotions. Relief--this dissertation has certainly taken longer than I expected. Regret--despite my effort to draw them out, my days as a "student" are finally drawing to a close. Joy--all those years as a graduate student will be officially recognized after all. But most of all gratitude. Words are but empty thanks and yet it is with words that I must attempt, in these pages, to express my heartfelt and sincerest thanks to all those who made this dissertation possible.

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My parents, Padmini and Sukumaran Nedungadi have been my constant source of strength, love and wisdom. They provided me with the greatest gift of all--a happy home and family. I would like to dedicate this dissertation to them as a small token of my deepest gratitude.

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Faced with an increasing assortment of brands in a number of
product categories, it is likely that today's consumer often resorts to
memory-based choice.  That is, the consumer relies on memory to retrieve
some smaller consideration set of brands prior to choice.  However,
marketing studies of brand choice typically require respondents to make
a stimulus-based choice.  That is, they are presented with a set of
brands to consider as choice alternatives.  Such an approach does not
consider the dynamics of consideration set formation.  Consumers may
retrieve very different sets of brands from memory on each choice
occasion.

This dissertation models brand choice as a two-stage process--a
first stage in which brands are retrieved and a consideration set is
formed, and a second stage in which choice is made from the set.  The
model suggests that brand choice probabilities could be substantially

affected by the probabilities of brand consideration. Accordingly, the dissertation focuses on the role of factors that could influence choice, not by affecting preferences for actively considered alternatives, but merely by shaping which brands are brought to mind and considered on a particular choice occasion.

Three experiments are conducted to examine the effects of such factors on choice. The first two experiments study the effect of usage-situations and provide evidence that certain attributes (referred to as cuing attributes) could act as retrieval cues in specific situations. Such cuing attributes are shown to guide the formation of consideration sets and thus affect the probabilities of brand choice.

The third experiment considers the effect of brand primes or cues that trigger memory for brands. Across three stimulus replicates, subjects were primed unobtrusively by having them answer questions about certain brands. Subsequently, subjects were given the name of a product category and asked to name the brand that they would choose. In all three product categories, priming of a brand was shown to have predicted effects on retrieval and choice, without having any effect on brand preference.

The results of these experiments highlight the important role of memory and brand retrieval in the formation and use of consideration sets.

INTRODUCTION

## Introduction

The set of brands considered by a consumer while making a choice--hereafter referred to as the <u>consideration set</u>--can have a strong influence on subsequent probabilities of choice. First, a brand that is not considered cannot be chosen. Further, probability of choice is a function of both the number and nature of other brands in the consumer's consideration set. To the extent that choice is dependent on memory, the salience and availability of brands will influence the contents of this consideration set. This dissertation examines the role of memory in defining the set of brands considered and subsequent influences on the probabilities of brand choice.

The importance of examining a narrower set of brands than the entire set available to the consumer is underscored by the rapid brand proliferation that has occurred in the last decade (e.g., Wind 1982). The average grocery chain now stocks more than 14,000 items or stock-keeping units (54th Annual Report of the Grocery Industry 1987). Brand Power '82 (1982) selected 20 representative supermarkets and counted the number of items stocked (stock keeping units) in 28 product categories that covered a wide range of products from facial tissue to tuna. There were 1313 items or an average of 47 items per product category. The category of soft drinks contained as many as 189 items while the category of potato chips/snacks was represented by 152 items.

Coupled with these large numbers is the observation that many brands of products have been around for a while. Old Standby's Hold Their Own (1983) reports on an interesting study by Mr. M. Lubliner, president of Lubliner/Saltz. Mr Lubliner took 25 top brands of 1923 and examined their position in 1981. He found that 19 of the old brands were still leaders in their product categories, four of them were second, one third, and one was among the top five.

These data suggest that in an increasing number of product categories, apart from restricting themselves to a smaller number of brands, consumers have long been in the stage of "routinized response behaviors" (Howard & Sheth, 1969). In these product categories, traditional hierarchies of effect may have been traversed and consumers may now choose among brands they are aware of, have established attitudes on, and in many instances have experienced before. In such a situation, it is not surprising to find that a significant proportion of purchases may not be preceded by much decision making (Kassarjian 1978; Olshavsky & Granbois 1979), or that consumers typically spend about thirteen seconds on any particular product group in the supermarket aisles (Hoyer 1984).

At the same time, consumer choice is far from stable. Studies of brand loyalty indicate that loyalty to a single brand is rare (e.g., Jacoby 1971; Wind 1977). A number of reasons have been advanced to account for consumer choice variability. The need for change, novelty, complexity or exploration (reviewed in Venkatesan 1973) and satiation (McAlister 1979, 1982) have been seen as motivations for brand switching. In addition, changes in external forces such as the context,

end-user and use-occasion are believed to contribute to choice variability.

An important factor that has not been explicitly considered in prior research on consumer choice is that consumers may often rely on memory to retrieve a candidate set of brands. For a number of reasons, brands remembered at one point in time may not be the ones remembered a short time later. Such reliance on memory may thus lend directly to observed variability in choice.

Marketers and consumer researchers studying the problem of brand choice often however assume the existence of some fixed set of brands from which the consumer chooses to purchase. Typically, consumers are presented with a set of brands and asked to indicate their "stimulus-based" preferences or choices (cf., Lynch & Srull 1982). This set has been operationalized as the total number of brands available, or alternatively as the number of brands the consumer is aware of or has used in the product class. However, the particular set of brands chosen for study in such instances may not be representative of any set considered by the consumer on a specific choice occasion. Representativeness of these sets can be improved only by determining the factors that affect their composition within specific choice occasions.

## Accessibility and Evaluation

The outcome of a choice process depends not only on a consumer's evaluation of brands but also on whether a brand is first considered for evaluation. It is by now a truism of marketing that awareness is a necessary precondition for evaluation--all hierarchies of effect posit brand awareness as a necessary first step (e.g., Lavidge & Steiner 1961;

Ray 1973). Having recognized this fact however, marketers and consumer researchers have proceeded to treat these two stages as distinct. Factors that influence brand awareness have been studied independently of those that affect evaluation for choice. It is a central thesis of this paper that in order to obtain a more complete picture of the choice process, the stages of brand awareness and brand evaluation need to be examined together. Doing so raises a number of points which are introduced here briefly and will be dealt with in greater detail in subsequent chapters.

First, the notion of awareness in marketing is similar to the concept of availability in memory research. A consumer is believed to be aware of a brand if she has knowledge of it and if it is available in long term memory. However, as Tulving and Pearlstone (1966) demonstrated, and subsequent research has corroborated, there is an important difference between <u>availability</u> in long term memory and <u>accessibility</u> on any particular occasion. Accessibility depends critically upon the manner in which information is encoded and upon available retrieval cues. Accessibility is therefore situationally defined and could vary according to the nature of contextual cues present at encoding or retrieval.

Second, the outcome of the evaluation process depends upon the other brands considered. The probability of choosing a particular brand will vary depending on the number and nature of brands with which it is compared. Accessibility will thus play an important role in defining the subsequent evaluation process.

Third, factors that influence brand evaluation may have separate and possibly different effects on accessibility. Thus, when retrieval precedes evaluation, a brand that is high on an evaluative dimension may not even be processed because it was inaccessible due to its low value on dimensions important for retrieval. For example, the novelty of a beverage may lead to it being preferred by consumers, but it may not be recalled for the very same reason.

Finally, given the increasing reliance of consumers on past experience and memory, it may well be the case that brand accessibility may explain an increasing proportion of variance in brand choice.

Recognition of these issues however, appears to make the choice problem more intractable. Tagging on the variance due to differential brand accessibility to the observed variability in brand evaluations seems only to complicate matters. The notion of the consideration set proves quite useful in this regard. The consideration set, as it is conceptualized here, serves to separate neatly the processes of evocation and evaluation. The next chapter develops this notion and outlines a general model within which the consideration set is formed and subsequently used by the consumer.

Chapter III builds on this general model and develops a more detailed model of the sequential choice process. Chapter IV then reviews the literature in memory and consumer behavior that discusses the specific processes by which the consideration set may be formed. Chapter V extends the literature review to specific aspects of brand choice and discusses the implications of the model for research in related areas of consumer behavior.

Three separate experiments were designed to test specific research hypotheses arising from the propositions outlined in Chapter V. Accordingly, Chapters VI, VII, and VIII present these research hypotheses, discuss the methods used to test these hypotheses and then present the empirical results, from each of these experiments.

Chapter IX concludes with the implications of the various findings for marketing practice.

CHAPTER II

CONSIDERATION SET FORMATION AND USE

Research on decision making processes has shown that consumers often use phased decision strategies during choice (Bettman & Park 1980; Lussier & Olshavsky 1979; Park 1978). Wright and Barbour (1977) describe three important stages of a consumer decision--defining a pool of alternatives, reviewing relevant information on these, and applying a decision rule. The evidence suggests that consumers often narrow down their candidate pool in the first phase of a decision process and thereafter make a choice from this reduced set. In all of these studies however, the decision making task was stimulus-based; that is, subjects were given a set of brands and asked to choose among them. When decision making is memory-based,[1] there is an even greater reason to believe that subjects will review only a reduced set of alternatives (cf. Miller 1956; Howard & Sheth 1969). A consumer may have knowledge of a large number of brands in a product class, but will typically retrieve and consider only a few of them on any particular choice occasion.

Figure II-1 depicts the choice process broadly as consisting of two chief stages--a first (<u>Evocation</u>) stage where a set of brands is evoked (or brought to mind), and a second (<u>Evaluation</u>) stage where

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[1] The precise definition of memory-based is deferred until Chapter III. For the present, it will be used for any situation where the consumer depends on memory, to some extent, to form a consideration set.
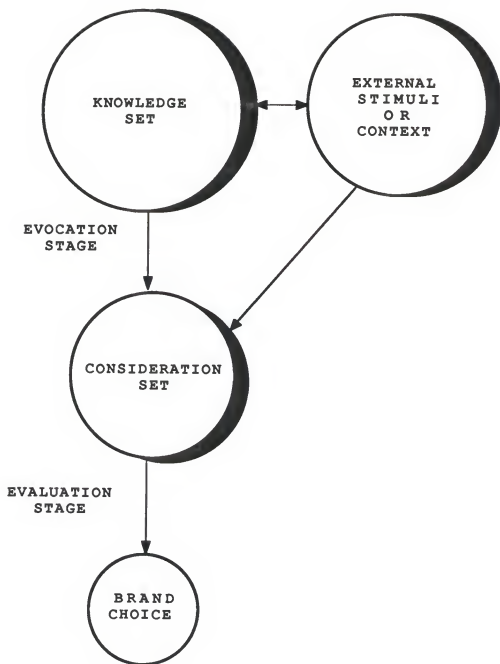
FIGURE II-1

FORMATION AND USE OF THE CONSIDERATION SET

evaluation and choice are made from this set. The consideration set is thus seen as mediating the processes of evocation and evaluation.

In this chapter, the basic distinction between these two stages will be identified. The next chapter will then develop a more detailed model of the sequential choice process.

It must be noted that in practice the two stages of evocation and evaluation may not be as distinct. The consumer may retrieve a few brands, perform some preliminary processing on them, retrieve a few other brands, and so on until a final choice is made. In terms of the model this implies that the consumer may cycle through the process a number of times even within one purchase occasion. This does not, however, change the basic structure of the model, but only entails a shift in levels. Instead of being considered at the level of the purchase occasion, the model would now apply to each "cycle" within such an occasion. On any particular purchase cycle however, retrieval of a brand must precede any conscious evaluation of it.

Most importantly, as will be argued here, the stages of evocation and evaluation are conceptually distinct, in that they entail very different types of processes. In order to facilitate the examination of these different processes and so as to address itself to the ultimate choice outcome, the dissertation will treat these two stages separately, at the level of the purchase occasion.

Interestingly, Figure II-1 also serves to demarcate the traditionally separate domains of prior research. Research on brand choice has assumed the existence of some consideration set and has focused on the evaluation stage of the choice process. Research on

memory processes in psychology and consumer behavior has examined the effects of various factors on retrieval. However, this research has rarely been conducted in the choice context and has therefore not examined how brand retrieval could affect final brand choice.

Looking at the choice outcome as a conjunction of these two stages, the probability of choice of brand A can be viewed as the function of two, non-independent probabilities: the probability of retrieving a consideration set that includes brand A and the further probability of choice of brand A from among the brands that comprise the consideration set. While most research on brand choice has dealt with the latter probability, this dissertation focuses on how systematic and predictable changes in the former probability could affect the probability of choice of brand A, especially when choice is dependent upon retrieval from memory.

Figure II-1 helps to identify the importance of laying out and examining the consumer decision process in some detail. The process by which the consideration set is formed may be quite different from the process by which members of this set are considered for choice. In selecting a specific set to present to respondents, choice researchers have implicitly assumed that these processes are the same. There is also a tacit belief that in the choice context, the motivational (or quasi-rational) factors that determine choice would override presumably weaker influences such as contextual retrieval cues.

At each stage of the choice process the consumer performs operations on two basic types of information--information on attributes and information on brands, in the product class. The distinctions being made

here between the stages of evocation and evaluation may best be understood in terms of their separate implications for the use of these two types of information.

## Use of Attributes during Evocation

There is no reason to expect that the attributes that serve to retrieve a set of brands will be the same as those that are used to evaluate these brands for choice. First, certain cues may be more influential at the choice stage. For instance, the attribute of "novelty" may be valued in a restaurant but a novel restaurant may not be readily recalled because more typical or common attributes are used to retrieve a consideration set. The attribute of "cuisine" may serve to retrieve a set of restaurants from memory, not necessarily because the attribute provides as much utility as "novelty," but merely because it is a convenient cue for retrieval and provides the consumer with a manageable and homogeneous consideration set.

It is also important to consider the influence of the external environment or context. Contexts enhance the accessibility of related information in memory. This "activated" information is subsequently more likely to be retrieved and used. Certain attributes may be more directly related to specific contexts and will then be rendered accessible by them. Thus for instance, the context of "going to lunch from work" may activate the attribute of "close by" most directly and the consumer may then use this attribute to form his consideration set.

## The Evocation of Brands

Brands in memory could be rendered accessible in a number of ways. They may be more available to the consumer; that is, he may be more

familiar with them, or he may have encountered them more recently.
Factors such as recency, frequency and saliency determine what is
remembered and thereby influence decision processes (Avant & Helson 1973;
Kintsch & Young 1984; Slovic, Fischhoff & Lichtenstein 1977).

Of greater interest in this dissertation is the effect of the
external context on retrieval of brand information. Brand accessibility
is situationally defined. That is, factors such as frequency, recency
and saliency within a specific context will affect whether a brand is
remembered within that context. It is important to distinguish general
brand awareness or availability from brand accessibility within a
specific situation or context (Alba & Chattopadhyay 1985; Schiffman &
Kanuk 1983; also see Barsalou 1985a)

Importantly, the retrieval cues made available by the context will
also influence brand accessibility. The attributes that are activated by
the context will be used subsequently to retrieve brands for inclusion in
the consideration set. Thus the consumer going to "lunch from work" is
likely to retrieve and include in his consideration set, brands that are
highly associated with the activated attribute of "close-by."

The chapter on memory aspects will discuss the factors that
influence accessibility in greater detail. It is important to note here
that retrieval of brands may depend critically on factors that affect
their activation in memory on a specific occasion.

Brands may also be rendered salient externally. The same consumer
may see an advertisement for a particular restaurant or be reminded by
his colleague of a place they lunched at the previous week. Thus the

evocation of brands consists both of retrieval from memory and perception in the relevant external environment.

## Use of Attributes during Evaluation

Research on decision processes has found that consumers use different attributes and different heuristics at various stages of the decision process (Bettman 1970; Lussier & Olshavsky 1974; Payne 1976). Further, Wright and Barbour (1977) found some evidence for the fact that subjects' choice of decision strategies and use of attributes in subsequent phases of a decision process depended upon the outcome of the earlier phase. In a similar manner, the outcome of the evocation stage could have important effects on the consumer's use of attributes during the evaluation stage.

First, the importance or weighting of an attribute during evaluation and choice will depend on its ability to discriminate among the considered alternatives. Greater discriminability could induce greater weighting while clustering on an attribute could lessen the importance of that attribute (Alpert 1971; Chakravarti & Lynch 1983; Slovic & Lichtenstein 1971; Tversky 1972; Zeleny 1974). The ability of an attribute to discriminate among alternatives will clearly vary as a function of the brands included in the consideration set.

Second, it is quite possible that once an attribute has been used to retrieve a set of brands, it may no longer discriminate among the brands retrieved. Thus for instance, the attribute of "cuisine" will no longer be useful for the consumer whose consideration set consists only of Chinese restaurants.

Most importantly, as discussed previously, attributes might serve a different function at the evaluation stage. While attributes served to "pull out" a homogeneous set of brands from memory in the first stage, they will now be used to choose from among the brands in this set. Depending upon the structure of the product class and the contextual retrieval cues, the attributes that serve these separate functions may well be different.

## The Evaluation of Brands

From the perspective of the hierarchical choice process outlined in Figure II-1, the set of brands retrieved on any particular choice occasion may engender a different choice sequence than one used if all brands were available and choice was stimulus-based. A brand's comparative attractiveness could vary depending upon the options with which it is compared (Wright & Barbour 1975). For instance, if a consumer neglects to evoke and consider Brand X which dominates Brand Y on certain key attributes, the probability that Brand Y will be chosen may increase substantially (MacCrimmon 1973).

In addition, a number of studies have shown that even if Brand X is included along with Brand Y in the consideration set, the probability that the former will be preferred to the latter is a function of the other brands (A, B, C) considered--see for example agenda effects (Tversky & Sattath 1979), decoy effects (Huber, Payne & Puto 1982; Huber & Puto 1983), similarity effects (Tversky 1972), and comparison set effects (Farley, Katz & Lehman 1978).

In summary, when choice is memory-based, a number of factors could influence retrieval of a consideration set and subsequent probabilities

of choice. The separate processes of evocation and evaluation could have very different implications for each stage of such a process. A fuller understanding of the choice process will necessitate a detailed examination of the process by which the consideration set is formed and used in choice. Toward this end, the next chapter elaborates on the basic model outlined in Figure II-1 and examines the sequential choice process in greater detail.

CHAPTER III

A CONCEPTUALIZATION OF A SEQUENTIAL CHOICE PROCESS

## Memory-Based Choice

Figure II-1 outlined two stages of the choice process--evocation and
evaluation. A consumer could rely on memory to retrieve information
relevant to choice at either or both of these stages. Memory-based
evocation would occur when the consumer relies on memory to retrieve a
consideration set of brands. Memory-based evaluation would occur when
the consumer relies on memory to retrieve information relevant to brand
evaluation.

The brand choice process could be viewed as falling on a continuum
ranging from purely stimulus-based to purely memory-based. When choice
is purely memory-based, the consumer relies on memory for both evocation
and evaluation, while when choice is purely stimulus-based all brand and
attribute information the consumer considers are obtained externally.
Clearly both of these extremes are rare in consumer choice. In general,
choice would lie on different regions of the continuum depending on the
degree of consumers' reliance on memory and external stimuli.

Researchers studying brand choice processes have typically used
purely stimulus-based tasks while most research on consumer memory
processes has concentrated on memory-based evaluation. The focus, in
this dissertation, is on the effects of memory-based evocation on choice.
Thus, as measured here degree of reliance on memory (for evocation)
depends on the number of alternatives retrieved and not on the

information obtained about them. Thus for instance, a shopper may retrieve three brands of coffee from memory while making up his shopping list before going to the store. He may then go to the store, review stimulus information on these three brands, and make his final choice. However, if in the process, he does not consider any other brands of coffee, this choice will be classified as memory-based for the purposes of this dissertation, since all brands considered were retrieved from memory.

A similar continuum is operative at levels of the choice process other than brand choice. A consumer deciding how to allocate his income may review externally (e.g., by talking to referent others) the alternatives available to her and may rely on memory for past allocations to make her choice. A consumer who wishes to purchase a particular product may retrieve the names of stores she has visited previously and may obtain names from the local paper. In all these cases the consumer considers a selected (and often restricted) set of alternatives for choice.

In many instances, a consumer may rely to an appreciable extent on memory to retrieve a set of alternatives for choice. This is more likely to be the case when she has previously encountered and chosen among these alternatives. Whenever a choice is at least partially memory-based, factors that influence retrieval gain importance. These factors may be internal to the consumer and may have to do with how information about brands is stored in memory. They may also be externally provided cues associated with a host of marketing stimuli. Clearly the importance of

such factors will be an increasing function of consumers' reliance on memory for brand evocation.

## A Model of Sequential Choice

Figure III-1 now expands on Figure II-1 and lays out a detailed model within which evocation and evaluation are hypothesized to occur. The model is quite general in that it considers both memory-based and stimulus-based choice.

Any purchase decision occurs within some <u>Context</u>. The context as it is conceived of in the model is very broad and consists of all external forces acting upon the consumer at that point in time. The usage-situation in marketing is a special case of context.

The <u>Knowledge Set</u> consists of the set of brands of which the consumer is generally aware. These brands and the consumer's associated knowledge of them are a part of long-term memory.

Although <u>External Alternatives</u> are a part of context, they have been shown separately since they could have a direct influence on the set of brands the consumer could consider. Thus external alternatives could be perceived directly by the consumer and may also (as part of the context) serve to stimulate retrieval of other brands from long-term memory.

The context is shown to have a direct influence both on retrieval from the knowledge set and on the set of brands perceived externally. By providing retrieval cues to the consumer, the context activates specific brands in long-term memory and renders them accessible. In addition it imposes constraints on the set of external brands to which the consumer may be exposed. A consumer looking for a carbonated soft drink at the
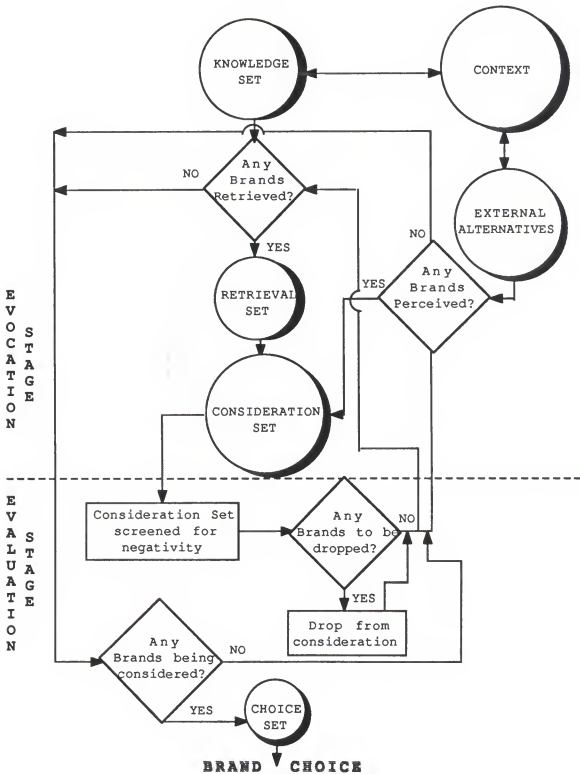
FIGURE III-1
MODEL OF SEQUENTIAL CHOICE PROCESSES

store is less likely to be exposed to orange juice as an alternative and is more likely to perceive other carbonated soft drinks stocked close by.

The <u>Retrieval Set</u> is defined as the set of brands retrieved by the consumer from memory on any particular occasion (Alba & Chattopadhyay 1985). The retrieval set serves to eliminate whole sets of brands contained in the knowledge set, not retrieved by the consumer and thus not considered or evaluated on this occasion.

The <u>Consideration Set</u> is defined as the set of brands the consumer possesses in working memory. All brands that the consumer considers <u>during this specific purchase occasion</u>[1] are members of his consideration set. As Figure III-1 indicates, the consideration set derives both from long-term memory and from the brands perceived externally. Membership in the consideration set will thus depend upon activation potential in long-term memory and salience in the relevant external environment.

The consideration set is depicted as being dynamic and changing over time. First, the consumer may, during the purchase process, remember some additional brands. Second, he may perceive some other brands externally. Finally, the consumer begins at this stage to screen the brands in his consideration set. He will now eliminate from the set those brands that he feels are not worthy of consideration. In a number of instances the consumer may retrieve or be reminded of brands that he does not even <u>evaluate positively</u>. In such cases he will realize, with very little processing, that the brand is unattractive and will cease to

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[1] The consideration set is defined here within a purchase occasion and not across purchase occasions (cf. Alba & Chattopadhyay 1985).

elaborate on it any further. In the absence of such elaboration, the brand will be dropped from working memory and the consideration set.

The <u>Choice Set</u> is defined as the set of brands from which the consumer finally makes his choice. The distinction between the consideration and choice sets is somewhat artificial and has been made here specifically to separate the processes the consumer is believed to go through on his way to a final choice. There are differences in the contents of the choice and consideration sets as they are defined here. The choice set is the final consideration set. At some point in the purchase process, either because the consumer is not able to or chooses not to include (or drop) any further brands in his consideration set, he is in a position to go ahead and make a choice. His final choice will then be made from the brands that comprise his choice set. Brands in the choice set have already been subjected to an initial screening (for negativity) and are all positively evaluated for purchase.

The two stages of evocation and evaluation introduced in Figure II-1 have been indicated in Figure III-1. In the evocation stage the consumer merely evokes (brings to mind) and includes in his consideration set all salient and accessible brands. Evocation thus includes both retrieval of brands from long-term memory and perception of brands externally. No evaluation is hypothesized to occur at this stage. In the second stage the consumer screens the brands in his consideration set for negativity, then compares and evaluates the brands in his choice set. In both cases some form of evaluation is seen to occur.

The earlier discussion of accessibility and choice can now be cast in terms of the model. The results of the evocation stage could have

substantial effects on subsequent evaluation and choice. Further, as discussed, consumer decision processes during evocation and evaluation are not necessarily the same. Methods used by the consumer to evoke brands will then impose constraints on the consideration set, which will in turn have an influence on subsequent evaluation for choice.

The preceding discussion of the sequential choice model and the various sets formed by the consumer proceeding to make a choice, needs to be differentiated from earlier discussions of the evoked set in marketing and consumer behavior.

## The Evoked Set

As early as 1969, Howard and Sheth introduced the notion of the evoked set and suggested that brand awareness and purchase consideration were the two characteristics that would qualify a brand as belonging in the buyer's evoked set (see also Howard 1977). They further stated that "since the content of the evoked set may change over time, a brand will be an element of buyer's evoked set if he would consider buying it, and if buyer were contemplating buying it at the time of the interview" (Howard & Sheth 1969, pg 211).

In this original formulation, the formation of the evoked set was attributed to learning phenomena. That is, a consumer may try various brands of products available to him and of which he is aware, and through repeated purchase decide which of these to include in his evoked set. From this perspective the contents of the evoked set would change if the buyer were made aware of some new brand offerings that he viewed favorably or if certain brands in his evoked set fell into disfavor. The

evoked set was then seen as a deliberate, simplifying heuristic employed by the consumer during purchase.

Subsequent research on the evoked set has tended to use some variant of this early definition. Thus, "a brand is defined as evoked by a consumer if it has been used, if it would be considered at the next purchase, or if it is rejected as a purchase alternative" (Urban 1975, pg 862). Alternatively, consumers have been asked for brands they would consider acceptable (e.g., Brisoux & Larroche 1981), or have been given a set of brands and asked to rate those they recognize (e.g., Larroche, Rosenblatt, Brisoux & Shimotakahara 1982; Narayana & Markin 1975). The evoked set is still characterized as being relatively stable and "constructed" by the consumer to simplify the ultimate choice process (Belonax 1979).

Recent research on the evoked set has attempted to move the concept out of the domain of learned, habitual behaviors into the information processing view of choice (e.g., May 1979; Parkinson & Reilly 1979). However the decision making process within which such a set functions has not been spelled out and researchers have not examined the assumptions involved in shifting to such a perspective.

The chief problem with earlier approaches to the evoked set seem to lie in their treatment of awareness as a dichotomous variable. The consumer is either aware or unaware of a brand and if he is aware of it he either does or does not consider it for purchase. Awareness has thus been treated as synonymous with having knowledge of the brand (or as being contained in the knowledge set). As the preceding discussion suggests however, mere knowledge of a brand is not sufficient for the

brand to be included in a set considered for purchase. For the various reasons described, brands may or may not be retrieved on a particular purchase occasion. In fact as the model implies, the decision making process may lead the consumer through a variety of different sets, many of which are rather fluid and evolving throughout the choice process. It is not clear which (if any) of these sets could be labeled his evoked set under the original definition. For this reason, the model in Figure III-1 has steered clear of using this term for any set. The first stage of the model in fact consists of different sets all of which are part of the "evocation" stage.

In comparison to prior treatments, the model presented in this paper recognizes these various sets as being less volitional, less stable, and more dependent on the externally and internally generated retrieval cues present at a given time or purchase context.

At the same time it must be acknowledged that the utility of the evoked set concept to marketers lies in its relative stability. If the retrieval, consideration and choice sets are to be of value to marketers, it is necessary to identify the factors that contribute to their stability within specific purchase situations, that is specific conditions under which this instability may be controlled.

With this goal in mind, the next chapter reviews research on memory effects in psychology and consumer behavior that are relevant to formation of the consideration set.

CHAPTER IV

CONTEXTUAL EFFECTS ON BRAND RETRIEVAL

This chapter will review relevant literature on context effects in retrieval and develop the process by which contexts might influence formation of the consideration set and subsequent brand choice. A number of issues are of direct concern.

First, does context influence retrieval of brands? If so, do different contexts lead to differential retrieval?

Second, what is the process by which the context influences brand retrieval in a consumer choice situation? Further, are there systematic factors in consumer contexts that influence retrieval and thus account for the observed variance across contexts?

Third, do such influences on retrieval carry over into judgment and choice?

These issues will be addressed in some detail in this chapter.

The consumer situations of interest in this dissertation have to do with the effects of context on _retrieval_ of _brands (or objects)_ from _long-term or semantic memory_. A consumer retrieving a consideration set is likely to attempt recall of specific brands he can purchase or stores he can visit. Further, it is likely that his knowledge of these brands has been accumulated in memory over a period of time and not acquired all at once.

Although a number of studies have examined the effects of context on recall, only a few researchers in psychology or consumer behavior have

examined these effects within the domain of semantic memory. Some studies (e.g., Bousefield & Sedgewick 1944; Friendly 1979; Gruenewald & Lockhead 1980; Hutchinson 1983) have examined the effect of cognitive structure on organization during free recall from semantic memory. Recall is shown to become increasingly organized and consistent over trials as learning proceeds. For instance, in a study using cold remedies, Hutchinson (1983) found that brand names tended to be recalled in clusters associated with specific benefit subcategories. The following discussion will review research related to the consumer contexts of interest and attempt to put it in an appropriate perspective.

Contextual Influences

In general, the effects of context on retrieval can be understood in terms of effects on the relative accessibility (Tulving & Pearlstone 1966) of specific types of information. Thus contexts may influence the accessibility of whole packets of information (such as schemas or categories) or when more directed, may render specific information on objects or their features accessible.

The earliest studies to examine the effects of an imposed "context" on recall were priming studies conducted with specific lists of words. Tulving and Pearlstone (1966) found that subjects could better recall words (e.g., lawyer) from a previously learned list of words, when they were first presented (primed) with the name of the category (e.g. professions) appropriate to those words, than when not provided this prime. These findings were interpreted as evidence for the difference between availability of material in memory and accessibility of this same material under particular contexts or recall conditions. Several similar

studies have since shown that people respond more quickly to words related to material (such as category names, other category members or similar concepts) that they have recently encountered (e.g., Anderson 1983; Heyer, Goring & Dannenbring 1985; Higgins & King 1981; Hudson & Austin 1970; Lewis 1971; Loftus & Loftus 1974; McKoon & Ratcliff 1986; Meyer & Schvaneveldt 1971; Srull & Wyer 1979; Tulving & Psotka 1971; Warren 1977; Wood 1969).

In such priming studies, it is generally assumed that during the period immediately following the presentation of some verbal material (stimulus), a change in state (from a neutral condition) occurs for some set of semantic units in memory. This change has been shown to occur, not only for the unit representing the stimulus in memory, but also for those units that are related to the stimulus in some way. Specifically, those units that (a) share common semantic features with the stimulus, (b) are within a few steps of the stimulus representation in some hierarchy or network, or (c) are nearby in the semantic space, are thought to become more accessible or more amenable to processing for a brief period of time. Items that share fewer features with the stimulus or are further away in the structure are less affected. This change in state within semantic memory is generally referred to as activation (Collins & Quillian 1969, 1970; Collins & Loftus 1975; Freedman & Loftus 1971; Loftus 1973; Loftus & Loftus 1974; Meyer & Schvaneveldt 1971, 1976; Neely 1976, 1977; Posner & Snyder 1975; Warren 1977).

A number of studies have examined the effects on recall of providing a perspective (or context from which to perceive) previously presented prose. Anderson and Pichert (1978) instructed subjects to study a

passage from one of two perspectives and asked them to recall this information. They were then asked to change their perspective and asked to recall the information again, from this new perspective. Interestingly, a shift in perspective led subjects to recall additional, previously unrecalled information, integral to the new (changed) perspective. In a similar study, Hasher and Griffin (1978) also showed that subjects asked to shift their perspective were able to recall more of the actual material in the passage than subjects not asked to do so. Related results were obtained with cued recall (Wilkes & Alred 1978) and recognition (Snyder & Uranowitz 1978) tasks. In these studies, the perspective or context was believed to provide access to the thematic attribute (Hasher & Griffin 1978) or the theme underlying the perspective, which then facilitated retrieval of related information.

Tversky and Kahneman (1973) examined the effects of accessibility on decision making and proposed that individuals use the "availability heuristic"[1] when making probability judgments. They demonstrated that people often (incorrectly) judged the likelihood of an event based on the salience or accessibility of the event in memory. Subsequently a number of studies have obtained similar effects on judgment and behavior (e.g., Carroll 1978; Gregory, Cialdini & Carpenter 1982; Hoch 1984; Ross, Leper, Strack & Steinmetz 1977; Sherman, Zehner, Johnson & Hirt 1983; Johnson & Tversky 1983). Subjects who, prior to the 1976 Carter-Ford election were asked to imagine that Ford would win, subsequently judged a Ford victory as more likely than those who had been asked to imagine that Carter would

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[1] The "availability heuristic" really refers to "accessible" information on a particular decision occasion.

win (Carroll 1978). Hoch (1984) reported that likelihood judgments on specific issues, such as buying a new car, were influenced by whichever side of the issue (for or against purchase) the subjects were asked to think about first. Gregory et al. (1982) found that having subjects imagine that they were watching and enjoying the benefits of cable T.V. made them more likely to subscribe to cable T.V. at a later time. In each of these instances the context directly manipulated the salience of certain facts, making them more accessible and thus biasing future judgments towards utilizing them.

In studies on the effects of positive moods, it has been shown that these moods serve to retrieve positive material in memory, thus influencing subsequent judgments, evaluations and decision making behaviors (Isen, Shalker, Clark & Karp 1978; Johnson & Tversky 1983; Mischel, Ebbesen & Zeiss 1976). A number of studies have found that positive moods, induced by a variety of manipulations, facilitated the recall of positive material (e.g., Bower 1981; Laird, Wagener, Halal & Szegda 1982; Nasby & Yando 1982; Teasdale & Fogarty 1979; Teasdale & Russell 1983). Isen et al. (1978) induced a positive mood in some randomly selected people in a shopping mall by giving them a free gift. People who had received a gift, in contrast to a control group, later reported in an apparently unrelated consumer survey that their cars and T.V. sets had better performance and service records. In all of these studies, it appears that positive moods and the feelings associated with them provide the context for retrieving similar material in memory.

In summary, the fact that contexts have an influence on retrieval from memory is fairly well established. Contexts enhance the

accessibility of related information in memory. This activated information is then more likely to be retrieved and utilized in making subsequent judgments.

<u>Types of Contexts</u>

Contexts could provide various types of retrieval cues to the consumer. In the case of primes such as subcategory cues or pro/con arguments the contexts provide the retrieval cues directly. Thus for instance, priming with the category name "professions" made the word "lawyer" (from a previously presented list) more accessible (Tulving & Pearlstone 1966). In this instance the "context" consisted specifically of the retrieval cue "professions."

In other cases the "contexts" are not just solitary primes. Rather, they could be more general and could lead to direct activation of many items in memory. The positive mood manipulations and perspective shifts discussed above are examples of such contexts. For instance, positive moods could potentially lead to the activation in memory of a variety of positively valenced information. Which of this information is accessed will then depend on the nature of the task that makes use of this information. Thus when shoppers (in a good mood) were asked to evaluate their T.V. sets, positive information with regard to T.V. sets was brought to mind and used in the formulation of subsequent judgments.

The contexts of relevance to research in marketing can also be classified in a similar fashion:

<u>Brand primes as context</u>. As Figure III-1 indicates, and the discussion of the model suggests, the context could consist of specific brand primes. Thus a person looking for a soft drink could see a special

display for Pepsi or might be reminded of Diet Coke when he goes to the vending machine. In these cases the brand that is "primed" will activate related material in memory.

   Usage-situations as context. The usage-situation has been chosen in this dissertation as an appropriate example of the second type of context discussed above. The usage-situation does not consist of a solitary cue and could lead to the activation of many related items in memory. For instance, the usage-situation of "going to a picnic" could potentially activate a large amount of related information. The specific choice task at hand (such as buying some snacks) would then serve to narrow down the specific information accessed in this situation.

   In this dissertation, separate experiments will examine the effects of both of these types of context on formation of a consideration set and subsequent brand choice. The specific processes by which these contexts might influence retrieval are now discussed.

The Usage-Situation and Retrieval

   A subsequent chapter will review the literature on usage-situational effects on choice. In brief, the prevailing view holds that usage-situations influence choice by affecting the importance weights of attributes in a multi-attribute choice framework (e.g., Bearden & Woodside 1976; Berkowitz, Ginter & Talarzyk 1977; Miller 1975; Miller & Ginter 1979). An important effect of the usage-situation not currently researched is its influence on retrieval. In general two possibilities exist:

   First, the consumer could retrieve the same set of brands across usage-situations. In such cases, final brand choice will vary due only

to the different importance weights ascribed to attributes, in choosing from this set.

Second, the set of brands retrieved could themselves vary across usage-situations. In this case, final brand choice will be influenced by changes in both retrieval and evaluation.

While no research has directly addressed this question, marketers appear to agree that the latter process is the more likely one. Thus, "different environmental contexts are likely to lead to varying consideration sets and consequently multiple choices" (Srivastava 1980, pg 106). It must be noted, however, that the role of retrieval in the formation of such consideration sets is not explicitly recognized.

How does each usage-situation stimulate the retrieval of appropriate consideration sets? A number of possibilities exist.

Direct retrieval from long-term memory. One possible explanation is that retrieval sets for each situation are stored in memory. This view seems implausible for a number of reasons. First, this means that a very large number of brands are stored in long-term memory for each situation an individual would encounter. Brands that are suitable for a multiplicity of situations would need to be stored separately under each situational category. Apart from capacity constraints, this could lead to highly dysfunctional overlap and redundancy. Second, people appear to be able to generate brands in novel contexts and for situations that they have not encountered before (e.g., Barsalou 1983; Barsalou & Sewell 1985).

Construction in working memory. The perspective taken in this dissertation is that brands are generated in a highly flexible process

that retrieves information from long-term memory and uses this information to construct concepts in working memory. Such concepts could include product categories, brands or associated attributes. The traditional view of category knowledge for natural categories (e.g., birds, dogs, etc.) is that it is contained in a single, compact package in memory, like a book in a library which is consulted when information is required. However, the need to account for the observed context dependence of retrieval has recently led several theorists to suggest a mode of representation that is more molecular and more flexible (e.g., Alba & Hasher 1983; Barsalou 1985b; Johnson 1983; Kahneman & Miller 1986; Schank 1982). "Memory is assumed to store content addressable files. . . . When information is required some of the files are selectively retrieved, computations are performed as needed. . . . All within 200 milliseconds or so" (Kahneman & Miller 1986, pg 15). Barsalou posits a similar process as underlying the generation of concepts. "Depending on the context, people incorporate different information from long-term memory into the current concept that they construct for a category" (Barsalou 1985b, pg 24). Such a flexible view of retrieval has as its basis the notion of memory as a network of associations.

A similar process is posited for brand retrieval. Accordingly, usage-situations, attributes of these situations (or benefits sought) and brands used are all associated in long-term memory. A specific situation selectively activates and recruits specific aspects of this (long-term) memory, that are then organized in working memory and utilized for the relevant purchase occasion. By assuming that the brands relevant to each situation are put together when required, it is not necessary to assume

that a large number of brands are stored in long-term memory for each specific situation. Instead the brands retrieved for a particular situation are believed to reflect a process capable of construction in working memory that utilizes a fixed set of information from long-term memory.

However, recruitment of information is highly selective. When thinking about restaurants at lunch time, the consumer does not include fancy sit-down restaurants or bars that he has patronized before. Kahneman and Miller (1986) suggest that such selectivity of recruitment is achieved more economically by precisely controlled activation, rather than by inhibition of irrelevant activated elements. Such controlled activation may be effected by using additional cues such as the product class to guide recruitment. The product class (e.g., restaurants) and the usage-situational probes are mutually reinforcing and are effective in restricting the retrieval set to relevant brands (cf. Medin & Schaffer 1978). At the same time, control of retrieval is far from perfect. It may often be difficult to exclude certain (undesirable) restaurants from being retrieved. Thus, for instance, if the consumer had encountered especially rude service at a restaurant quite recently, he may be unable to keep this restaurant from coming to mind. In such instances, as discussed in Chapter III, this restaurant will be dropped from consideration during the initial screening stage.

In summary, the usage-situation could lead to retrieval of brands through a highly flexible and selective process. It is unlikely that all brands are stored and retrieved directly. More likely, the usage-situation activates relevant information in long-term memory. This

information is then put together in working memory to construct a retrieval set for the current occasion.

This process is shown in Figure IV-1. Material activated in memory could take the form of brand or attribute information. The situation of "lunch from work" could activate the attributes of "close by" and "quick service." Restaurants that are high on these dimensions (Burger King & Pizza Hut) would then be retrieved and included in the consideration set. Often, when a specific brand has been frequently encountered for a situation, it is likely that the brand will be directly activated. It is possible that MacDonalds will be directly retrieved in this fashion. However, as discussed earlier, the reason why MacDonalds got associated with the "lunch from work" situation in the first place is likely to be its high values on the attributes of "close by" and "quick service." It is further likely that once MacDonalds is activated it will make similar brands accessible. Again, such "similarity" is probably situationally defined by the same attributes discussed earlier (Barsalou 1985b; Roth & Shoben 1983). Thus some brands and certain attributes or properties of brands are activated by each usage-situation and are believed to underlie the process of retrieval set formation. In this dissertation, attributes that serve this function are labeled cuing attributes.

Cuing attributes are the attributes that underlie brand retrieval on any particular occasion. Thus, a usage-situation activates cuing attributes, and brands with high values on these attributes are retrieved and included in the consumer's consideration set.
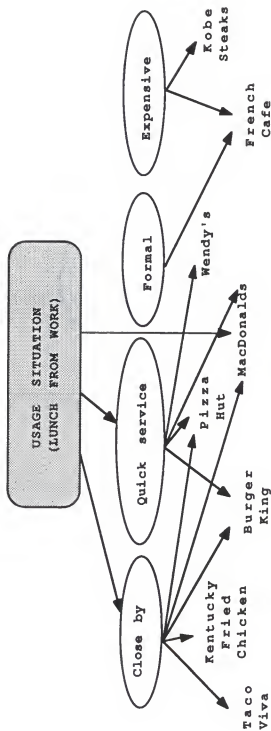
FIGURE IV-1

USAGE-SITUATIONAL EFFECTS ON ACCESSIBILITY

In general, it may be said that all retrieval (for choice) takes place within some usage-situation. That is, when a consumer is retrieving brands and forming a consideration set, he does this with some usage in mind. However the degree of influence of the usage-situation on retrieval could vary depending upon the specificity of the goal (usage) in mind. If a consumer is thinking specifically in terms of soft drinks to buy "for a picnic," this situation could have a direct effect on the definition of the retrieval set. On the other hand the consumer could just be thinking about going to the store and buying some soft drinks for the next week. In this case the effective retrieval cues are not tied to a specific end usage and the usage-situation may have less of an effect on retrieval.

This latter situation does not however lessen the importance of the cuing attribute. The consumer is likely to use cuing attributes whenever he needs to retrieve brands from memory, in forming a consideration set.

## The Determinants of Accessibility

Most research on brand attitudes and evaluations has focused on the attributes or properties of brands that constitute their evaluation. Similarly, when researchers in cognitive psychology have asked the question--what kinds of items or category members become accessible?-- the answer has been sought in the properties or attributes of those items (e.g., Medin & Smith 1984; Mervis & Rosch 1981; Murphy & Medin 1985; Rosch 1978; Smith & Medin, 1981). In discussing the accessibility of brands, this section will review related research on the properties of brands that render them salient and then develop the implications of this research for the notion of cuing attributes. As defined earlier, cuing

attributes are those attributes that underlie brand retrieval on any particular occasion.

Recent research on the accessibility of categorized knowledge has centered around the concept of <u>graded structure</u>. That is, membership in most categories is believed to be a matter of degrees. Some category members are perceived as better examples, or more "typical" of the category than are others (e.g., Barsalou 1985 a, b; Cantor & Mischel 1979; Medin & Smith 1984; Mervis & Rosch 1981; Rosch 1974, 1975, 1978; Mervis, Catlin & Rosch 1976). Thus a "retriever" is perceived to be more typical of the category "dog" than a "pekinese." Such <u>typicality effects</u> have been replicated for brands in product categories (Nedungadi & Hutchinson 1985; Ward & Loken 1986).

The importance of typicality effects for accessibility lies in the findings that typicality is highly correlated with a number of memory measures such as order, speed and frequency of production of exemplars from memory (Mervis, Catlin & Rosch 1976; Rosch 1974, 1975; Smith, Shoben & Rips 1974) and with various indices of brand awareness and recall (Nedungadi & Hutchinson 1985).

A number of recent studies that have examined contextual effects on typicality have concluded that the typicality of a category member is highly sensitive to the context in which such typicality is measured (Barsalou 1985 a, b; Barsalou & Sewell 1985; Roth & Shoben 1983). For instance in the category of "beverages," the context "waking up in the morning" may render "coffee," "orange juice" and "tea" as most typical while the context "having a drink with your donut" would make "milk," "hot chocolate" and "coffee" most typical (Roth & Shoben 1983). Thus the

determinants of typicality need to be examined within specific context or usage-situations.

Family resemblance

The graded structure of categories has often been discussed in terms of the family resemblance of members (Rosch & Mervis 1975; Tversky 1977). It has been found that, "members of a category come to be viewed as typical of the category as a whole, in proportion to the extent to which they bear a family resemblance to (have attributes that overlap those of) other members of the category" (Rosch & Mervis 1975, pg 575). Thus, typical category members are seen to be highly similar to other members of the same category and very dissimilar to non-members of the category. In discussing what constitutes such "similarity," Tversky (1977) models family resemblance in terms of the features or attributes possessed by members of the category. Features shared by members of a category are labeled "common features" while features unique to specific category members are "distinctive features." It follows that the family resemblance of a category member increases proportionately with the number of common features, and decreases proportionately with the number of distinctive features it possesses. Each feature can vary in its degree of "commonness." Attributes that are common to most category members will contribute more to family resemblance than attributes shared by only a few members of the category. In addition, the number of attributes that a category member has that are shared with non-members of the category decreases its family resemblance (Rosch & Mervis 1975).

The important question for our purposes is that given family resemblance is correlated with accessibility, which are the features or

attributes of objects that contribute to high family resemblance? In a processing sense, which are the attributes that, by increasing the family resemblance of category members, make them more accessible? It would appear that attributes that are (a) shared by many members of the category and (b) not shared with members of other categories, are those that are important to accessibility.

## Cue-validity

The notion of <u>cue-validity</u> is an attempt to define such a property of attributes. A cue is "valid" to the extent that it is able to differentiate members of a category from its non-members (Reed 1972; Rosch & Mervis 1975; Rosch, Mervis, Gray, Johnson & Boyes-Braem 1976; cf. Murphy 1982). The property "has feathers" is highly valid for the natural category of "birds" because most birds have feathers while most non-birds do not. On the other hand, "has eyes" is a less valid cue for birds because a variety of other things (besides birds) have eyes.

The notion of cue validity has been mainly discussed in the context of recognizing and categorizing members of a category. Thus for instance, an animal is more likely to be categorized as a bird if it is seen to have feathers, whereas the fact that it has eyes may not help at all in categorization. Barsalou and Bower (1980) extend the notion of cue validity to attribute accessibility and demonstrate that the diagnosticity of an attribute is an important determinant of its accessibility.

## Diagnosticity

A property is defined as diagnostic to the extent that it is useful for differentiating instances of the concept from non-instances (Barsalou

& Bower 1980). This property of attributes is identical to their cue-validity. Diagnosticity is preferred here since it has been specifically discussed with respect to property accessibility. Thus "cola" is a property that is diagnostic for cola soft drinks while "carbonated" is not. Similarly "acetaminophine" is diagnostic for pain relievers such as Tylenol.

The importance of diagnosticity has also been stressed in the context of classifying and recognizing instances of a concept (Hayes-Roth & Hayes-Roth 1977; Medin & Schaffer 1978). Classification of exemplars during concept learning is seen to be determined by the diagnosticity of their properties or attributes. Barsalou and Bower (1980) demonstrated the importance of diagnosticity on the accessibility of attributes or properties. Subjects pretended they were medical students learning to recognize imaginary diseases. On each trial, subjects were given three symptoms a patient could have and then learned to recognize the diseases associated with these symptoms. Each disease was designated by a number. The experiment manipulated the diagnosticity of each symptom by associating it with either one, two, three or four diseases (see Figure IV-2). Thus, <u>blurred vision</u> has the highest diagnosticity because it is associated with only one disease, while <u>skin rash</u> could mean either of two diseases. Analogously, <u>fatigue</u> is even less diagnostic. During acquisition, subjects learned to associate the symptoms to the diseases. In a subsequent surprise test, subjects were given each disease number and asked to recall its symptoms. As hypothesized, the diagnosticity of a symptom for a disease predicted its recall when the disease was
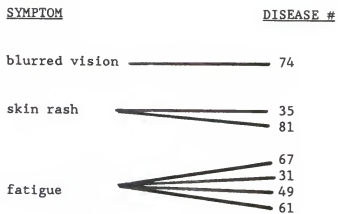
FIGURE IV-2

DIAGNOSTICITY OF SYMPTOMS FOR A DISEASE
Source: Barsalou & Bower (1980)

mentioned. Thus the accessibility of attributes (or symptoms) was influenced by their diagnosticity.

Turning to usage-situations, this suggests that properties that are diagnostic for each situation are likely to be more accessible and thus become cuing attributes for retrieval. A property is diagnostic for a situation if it can differentiate between members and non-members of that situational category. Thus an attribute of a restaurant would be diagnostic for the situation of "lunch from work" to the extent that it could differentiate between restaurants that are suitable and those that are unsuitable for lunch.

Goal relevance

A slightly different perspective on attributes is provided by Barsalou (1985a). As discussed, the measure of family resemblance reflects the features or properties that are common or unique to specific members of categories (Rosch & Mervis 1975). In addition, category members could have different values on these attributes. In general, although this is not strictly implied, family resemblance has been thought to measure the _average_ value of objects on attributes (Barsalou 1985a). Thus for instance, in a category such as birds, a bird with a large amount of feathers (e.g., a peacock) and a bird with few feathers (e.g., a penguin), may be considered less typical than a bird with an average amount of feathers (e.g., robin). However, Barsalou (1985a) suggests that in certain instances it is not the average but the _extreme_ value on attributes that may contribute to increased typicality.

Goal-derived categories. To examine the role of such extreme information in determining typicality, Barsalou (1985a) uses goal-derived

categories, that is, categories that are constructed for the specific purpose of fulfilling certain goals (Barsalou 1983; Barsalou & Sewell 1985). Examples of goal-derived categories include "foods to eat on a diet" and "things to take from one's home in case of a fire." These categories are quite different from natural categories (such as birds or trees) used in most categorization research. Interestingly, the notion of goal-derived categories is somewhat similar to, but broader than, the notion of consideration sets formed in specific usage-situations. While both consideration sets and goal-derived categories are formed to fulfil certain goals, Barsalou's operationalization of goal-derived categories typically covers more than one "product class" or natural category.

What goal-derived categories seem to do is to introduce a specific goal (or usage-situation) that shifts the subject's perspective to a specific portion of his "product space." Thus for instance, "foods to eat on a diet" introduces the goal of "losing weight" as paramount. In this case, the attribute of "zero calories" becomes <u>goal-relevant</u> and the subject views the category of "foods" from this perspective. Consequently foods that are very close to zero in calorie content emerge as typical. Similarly, "things to take from one's home in case of a fire" introduces "saving valuables" as the most relevant goal and objects that are most "valuable" come to mind most easily. Barsalou (1985a) refers to the attributes that underlie typicality in such instances (given goal-derived categories), as <u>ideals</u>.

Barsalou (1985a) points to an important distinction between knowledge of natural and goal-derived categories. It would appear that while the average information on natural categories could only be

generated with some prior knowledge of the category members, the ideals for goal-derived categories could be directly suggested by the external goals. The same distinction can be extended to diagnostic and goal-relevant attributes. The diagnosticity of an attribute would depend on the knowledge structure of the individual. A property would be diagnostic for an individual, if it helps to differentiate between members and non-members of categories, as they are organized in the individual's (long-term) memory. On the other hand a goal-relevant attribute could be directly suggested by the context or goal for which the individual is making a choice. Thus for instance, the ideal value of "zero calories" on the "calorie" dimension was suggested directly by the goal of "losing weight."

The notion of goal-relevance is important to the present discussion of usage-situational influences. It suggests that cuing-attributes may be activated directly by the usage-situation. In addition, when cuing attributes are goal-relevant, brands with highest value on the cuing attribute are most likely to come to mind. Thus in the (goal-derived) usage-situation of "lunch from work," the goal of getting a "quick lunch" may directly activate the attributes of "close by" and "low cost." Restaurants that are the closest and cheapest may then come to mind most easily.

It may be useful to consider diagnosticity and goal-relevance as mutually reinforcing determinants of accessibility. Certain attributes may be both goal-relevant and diagnostic. The attribute of "close by" which is goal-relevant in the situation of "lunch from work" might also be diagnostic, in that it may differentiate between restaurants that are

suitable and those that are unsuitable for lunch (for instance, if one is working downtown). On the other hand "low cost," although it is goal-relevant, may not be diagnostic if the consumer's knowledge set consists chiefly of the more economical restaurants that he usually patronizes.

## Frequency-of-instantiation

The frequency with which a brand is encountered <u>as a member of a category</u> is also related to its typicality (Barsalou 1985a). As discussed earlier, if a consumer frequently went to lunch at MacDonalds it is likely that this restaurant would be highly typical and would come to mind easily in that situation. It is important to note that frequency-of-instantiation is also contextually defined. A consumer who frequently goes to lunch at MacDonalds is unlikely to think of it as typical for another situation such as "celebrating a special occasion." As argued earlier, the fact that MacDonalds has been frequently visited for lunch is likely to be due to the factors that made it accessible for that situation in the first place.

In the same manner an attribute that is frequently used is likely to come to mind easily. If low price is very important to a consumer, he is likely to use it often in his evaluation of products, and the attribute may then be easily accessible.

## Intensity and salience

A number of other factors may affect the salience of brands, rendering them more available in general. Various advertising techniques for increasing brand awareness would be relevant here. Thus, an extremely catchy or bright advertisement or interesting package could bring a brand to mind. Unexpected or incongruous information on the

brand could also serve to increase accessibility (Hastie 1980; Hastie & Kumar 1979; Srull 1981). As discussed earlier if a consumer had encountered particularly rude service at a restaurant this may cause it to be retrieved. The effects of such increased salience would however be less context specific and less dependent on the specific retrieval cues generated by the relevant context.

In summary, a number of factors are likely to influence the accessibility of brands and their properties within a usage-situation and determine the cuing attributes that lead to brand retrieval. Brands retrieved will be included in the consideration set and evaluated further for choice.

This discussion of accessibility relates directly to some of the distinctions being made earlier between the processes that may operate at retrieval and those that may operate at evaluation. While the consumer may consider a number of attributes as evaluatively important she will not use all of these to retrieve a consideration set. The attributes she uses in this instance will depend on a number of factors including the organization of product knowledge in memory (diagnosticity), the usage-situation for which brand is being purchased (goal-relevance) and other properties of the brands and attributes such as frequency-of-instantiation and intensity. The attributes she uses to construct her retrieval and consideration sets will then have a direct and important influence on further processing for choice.

Brand Primes and Retrieval

As discussed earlier, apart from usage-situations, brand primes also constitute an important contextual influence on retrieval. The effects

of brands externally perceived, on retrieval from memory, would closely parallel effects obtained in the priming studies discussed earlier.

## The facilitating effect of brand primes

Most priming studies have examined the effect of a prior prime on the time taken to react to subsequent material. Collins and Quillian (1970) showed that the time taken to answer such questions as "Is a canary a bird?" is decreased by as much as 600 milliseconds if information about canaries has been accessed on a previous trial. Using a somewhat different paradigm (lexical decision task), Meyer and Schvaneveldt (Meyer & Schvaneveldt 1971; Meyer 1973; Schvaneveldt & Meyer 1973) have shown that the reaction time to verify a letter string (e.g., NURSE) as a word was faster if the subject had just seen a semantically similar word (e.g., DOCTOR) as opposed to a semantically dissimilar word (e.g. BREAD).

The effect of priming on retrieval from long-term memory is believed to be governed by the operation of two distinct processes. The first of these operates automatically, is strategy free, and occurs without depleting the resources of a limited central capacity processor. According to this "spreading-activation" model, a stimulus activates its node or "logogen" (Morton 1969) in memory, and this activation then spreads to adjacent, semantically related logogens, but not to remote, semantically unrelated logogens. Such automatic spreading activation is very fast, occurs without conscious attention and does not affect the information stored in semantically unrelated logogens to which the activation does not spread (Neely 1977). This results in a facilitation in the subsequent processing of all activated logogens.

Posner and Snyder (1975) found evidence for a second process during priming. According to the "location-shifting" model (Schvaneveldt & Meyer 1973), a limited capacity attentional mechanism can attend only to the information stored at those nodes or logogens upon which it is focused. Priming of a stimulus word leads to such a focusing of attention. Attention must therefore be shifted before the information stored at another, unattended logogen can be analyzed in preparation for a response. According to this model then, semantic facilitation occurs because attention traverses a shorter distance when it shifts between semantically related logogens than when it shifts between semantically unrelated logogens. The major properties of the location-shifting model are however opposite to those of the spreading-activation model. That is, the limited capacity attentional mechanism is believed to be slow acting, requires the focusing of conscious attention and acts to inhibit the retrieval of information stored in semantically unrelated logogens upon which it is not focused.

The crucial distinction between the two models is in this inhibition of unrelated elements and can best be understood in terms of a specific priming task. Consider two individuals who are "primed" with the brand name "Seven-Up." Activation is assumed to spread to all related brands, say, "Sprite," "Diet Seven-Up" and "Diet Sprite" in this instance. Further, attention is directed at the nodes representing these brands. Now after a short while, one individual is given the brand name "Coke" while the other is given the name "Sprite." The spreading activation model suggests that the former individual would take longer to react to the new brand because activation will take longer to spread to this

dissimilar brand. Additionally, the location-shifting model suggests that since attention was focused at the nodes related to "Seven-Up" (including Sprite), reading out the information stored at the "Coke" node will require redirection of this attention. On the other hand reaction to "Sprite" would not require such redirection of attention. In this sense, reaction to "Coke" will be inhibited, in this instance. A number of studies have found support for both processes in priming (e.g., Neely 1976, 1977; Ratcliff & McKoon 1981).

It would appear that a critical factor that determines which of these processes occur would be the amount of attention directed at the prime in the first place. Most priming studies do require the allocation of some attention to the prime since individuals are required to use the prime to generate other words. In the consumer choice situation, it is clear that both of these processes could occur. Without the focus of any deliberate attention, the consumer could be exposed to various brands as stimuli. On the other hand, a consumer scanning the shelves at a supermarket, using the brands to stimulate retrieval could be viewed as strategically focusing attention on specific external stimuli.

Whichever the process however, the result that the accessibility of items related to the prime is facilitated seems to hold across studies. Thus for instance, the presentation (or perception) of Coke prior to retrieval should render brands in the same or similar subcategories (e.g., Pepsi), more accessible than brands in less related categories (e.g., Sprite) and brands in unrelated categories (e.g., Corvette).

The inhibiting effect of brand primes

An additional finding of interest, in terms of the effects of presented cues upon subsequent retrieval, is the inhibiting effect of part-set cues. A number of studies, again mostly within the episodic memory paradigm, have found that provision of a part of a (previously presented) list as cue, appears to inhibit the retrieval of the other members in the list (relative to a control condition where no such cues are presented) (e.g., Roediger 1973, 1974; Roediger, Stellon & Tulving 1977; Slamecka 1968, 1969).

Rundus (1973) presented a basic model that accounts for the effects of part-set cuing on recall. The model assumes that there are direct associations between the category name and members of that category and that these associations vary in strength. The model also assumes that there are no direct associations between the members themselves. Rundus's (1973) ratio rule states that if a category name is presented as a cue, the probability of retrieving any member of the category is a ratio of the associative strength of that member (with the category name) and the sum of the associative strengths of all members associated with that category name. Rundus (1973) further assumed that during retrieval, items from the category are sampled with replacement and that each time a particular item is sampled, the strength of association between that member and the category name is increased.

According to this model, if a brand is primed, the associative strength between the brand and the category name is momentarily enhanced, thus increasing the probability that the brand will be "sampled" again. Also because of the ratio rule, the relative probability that other

brands will be retrieved decreases momentarily. As such, the individual tends to become "fixated" on a subset of the brands that are retrieved initially in response to the category (or brand) prime, thus making it difficult to retrieve other brands in the category. Retrieval stops according to the <u>cessation rule</u>, when a number of attempts to recall brands does not lead to retrieval of any new brands.

The most relevant finding from these various studies is that cues enhance total recall if they serve as reminders to categories that may not have been previously accessed (inter-category cuing), while they tend to inhibit retrieval if they represent instances of accessible categories (part-category cuing).

Very few studies have examined the effect of part-set cuing on recall of categorized information in semantic memory. Judging from the few studies that have been done, the results are somewhat equivocal (Nickerson 1984). Part-set cues have been found to have a facilitative effect in some instances (see Nickerson 1984) and an inhibitory effect in others (Alba & Chattopadhyay 1985; Brown 1968; Karchmer & Winograd 1971).

From the results of these studies it appears that a number of factors might mediate the effects of part-set cues on retrieval of brands.

<u>Market structure/consumer knowledge</u>. When the product category is well differentiated and is divided into clearly perceived subcategories, brand priming is less likely to have an inhibitory effect (Alba & Chattopadhyay 1985). In such instances, it is likely that the consumer is familiar with and aware of the "structure" of the category. As a

result inhibition would be fairly difficult. Along these lines, Alba and Chattopadhyay (1985, Experiment 2) found that females, who had a better knowledge of beauty shampoos than males, were not inhibited by part-set cues.

Number of brands in the category. An aspect of categories, related to structure and category differentiation is the number of brands that belong to each subcategory. A category is well differentiated if it has a sufficient number of subcategories, such that each subcategory contains only a small number of brands. Inhibition is unlikely in this instance. On the other hand if a category is not well differentiated, each subcategory may contain a number of brands and inhibition is more likely to occur.

Cue set size. Nickerson (1984) independently varied the ratio of cue set size (number of items primed) to the target set size (total number of items in the category) and measured the effects on inhibition. He found that inhibition is more in evidence when the ratio of cue set size to target set size is relatively large. In the contexts of interest in this dissertation, it is likely that the number of brands primed externally will be relatively small. On the other hand, as discussed at the outset, due to increasing brand proliferation, the number of brands in any consumers knowledge set may be quite large. In such situations it is unlikely that brand priming will have any inhibitory effect.

Degree of attention. One factor that does not seem to have been explicitly considered in the literature on part-set cuing is the degree of attention required to be allocated to the primes. As outlined above, priming is believed to work through two different mechanisms. When the

primed brand is not consciously attended to, priming is fast and automatic and acts through the spread of activation to related items in the network. This is likely to be the case when priming is "unobtrusive" and the consumer is unaware that he is "being primed." Thus when a consumer sees a special display for Pepsi as he is walking down the aisle, it is unlikely that he will deliberately use this "prime" to help him retrieve other brands in his knowledge set. All the same, the Pepsi display, if perceived, is likely to automatically activate related material in memory.

On the other hand, most studies of part-set cuing use "obtrusive" cues in that they (implicitly) ask subjects to use the cues provided to come up with other items in the category. In these instances, the subject necessarily directs his attention to these cues. Retrieval of other category members then requires a shifting of this attention and follows the location-shifting model discussed above. In such cases, inhibition of unrelated items is more likely to occur (cf. Neely 1977).

In summary, when product categories are well differentiated, the primes to brands ratio is relatively small, consumer familiarity with the category structure is high and the primes are relatively unobtrusive, priming with one brand is likely to have a facilitatory effect on retrieval of other competing brands.

The next chapter will develop the implications of the various retrieval effects discussed for research on consumer decision processes and choice.

CHAPTER V

RETRIEVAL AND BRAND CHOICE

This chapter has two basic objectives. First, it serves to summarize the various retrieval effects discussed thus far, on the consumer's formation of a consideration set.

The second objective is to extend the effects of retrieval to the important influence of the consideration set on choice. A central theme motivating this dissertation has been the observation that when a consumer relies on memory to retrieve a set of brands, various contextual effects on retrieval could have a significant impact on brand choice.

The research in related areas of consumer behavior is first reviewed, as it pertains to brand choice, and the implications of the previous discussion for each of these areas is developed.

Memory-Based vs Stimulus-Based Choice

At the outset it was observed that presenting consumers with a set of brands to choose from, and modeling choice probabilities as they arise from this task, may constitute a misrepresentation of the actual consumer choice process. It was suggested that especially for product classes and purchase situations where they have had some prior experience, consumers may increasingly rely on memory to retrieve such a set of brands. In such cases it is important to consider consumer decision processes as they occur in memory-based choice situations and compare them with the processes that have been examined within stimulus-based choice tasks (Lynch & Srull 1982).

A summary of the distinctions that have been made with respect to these two types of tasks is presented in Figure V-1. The figure uses the model of choice developed in Chapter III to compare the decision process as it has been studied in stimulus-based choice to the process suggested in the case of memory-based choice. It assumes that the specific usage-situation for which the choice is being made has been taken into account. The previous chapters have suggested that a number of distinctions need to be made between these processes.

First, the set of brands given to the consumer may not be representative of the set he considers for that specific situation. That is, in Figure V-1, consideration set A may be quite different from set B which is given to the consumer.

Second, since subsequent processes are influenced by the set of brands considered, the process by which brand 'a' is chosen from set A will be different from the process by which brand 'b' is chosen from set B.

Third, as a result it is possible that for the same situation, brand a is not the same as brand b, that is, final brand choice may be different.

Finally, it is important to study the process by which set A is formed because (a) it is important to identify set A for specific choice situations and (b) the process by which set A is formed may influence the process by which brand a is chosen from set A.

A dimension that is not reflected in Figure V-1 is the effect of the context within which each choice is made. Introduction of the context accentuates the differences between the two processes, specifically

|  | KNOWLEDGE SET | RETRIEVAL SET | CONSIDERATION SET | CHOICE SET | BRAND CHOICE |
|---|---|---|---|---|---|
| MEMORY-BASED CHOICE TASK | Brands available, general awareness | Brands rendered accessible | Brands considered (Retrieved & Perceived) (A) | Brands evaluated | Brands chosen a |
| STIMULUS-BASED CHOICE TASK | X | X | Brands given (B) | Brands evaluated | Brands chosen b |

FIGURE V-1

MEMORY-BASED VS STIMULUS-BASED CHOICE

because each context has systematic influences on the composition of set A, not reflected in the set B given to consumers in a stimulus-based choice task.

The evoked set research cited earlier has tended to use some non-systematic mix of memory-based and stimulus-based choice tasks. Importantly, evoked sets have not been studied within specific usage-situations. Consumers are sometimes given a set of brands and asked to consider those they recognize. At other times, they have been asked to recall brands and then indicate which of these they would consider. Again, in such instances, depending on the type of task specified, decision processes may vary and may be unrepresentative of any process undertaken on a specific occasion.

## Cuing Attributes and Choice

The notion of cuing attributes developed here suggests that certain attributes of a brand may be most influential at retrieval, even prior to the stage where any deliberative evaluation or choice is made. The discussion further suggests that such cuing attributes may be a subset of, or even different from the attributes traditionally considered important (or utilitarian) for choice. Notably, these cuing attributes serve to limit the consideration set before any utility based comparisons are undertaken.

It is necessary to distinguish the effect of cuing attributes at retrieval from the effects of attribute importance, determinance and salience (at choice) discussed in the consumer behavior literature. Research that has examined these concepts in consumer behavior has typically restricted itself to stimulus-based choice tasks.

The notion of <u>attribute importance</u> has been motivated chiefly by predictive concerns, within the domain of multiattribute models of choice. Important attributes are believed to be those that best predict consumer preference and choice. Attribute importance is believed to reflect the utility (or benefit) derived by the consumer from the brand's possession of that attribute. Choice models then, predict the relative utility of attributes or the part utilities of various attribute levels in a multi-attribute evaluation framework.

Subsequent research on attribute importance suggested that although an attribute may be important to a consumer it may not be <u>determinant</u>, in that it may not discriminate among given choice alternatives (e.g., Alpert 1971, 1980; Berkowitz, Ginter & Talarzyk 1976; Myers & Alpert 1968, 1977; Myers 1971). Thus while "car safety" may be an important attribute, this attribute may not discriminate among cars in a situation where a consumer is choosing amongst cars that are all regarded to be safe. It must be noted that here too the initial concern was not with the attributes the consumer may actually process, but with those that may best help predict his behavior (Olson, Kanwar & Muderisoglu 1979). The fact that the consumer may in fact judge cars on "safety" was not explicitly dealt with.

Subsequent discussions of attribute determinance (e.g., Alpert 1980) have come closer to considering those attributes that the consumer may actually consider while making a choice. Alpert (1980) defines determinant attributes, broadly, as those attributes that are most influential in determining preference and choice. In this sense they are believed to be very similar to salient attributes. However it is

necessary to distinguish between salient and determinant attributes. The
notion of determinance (at choice) is really very similar to the notion
of diagnosticity (at retrieval); both concepts stress the ability of an
attribute to differentiate between alternatives. As discussed below,
salience during choice is similar to the notion of accessibility for
retrieval. Thus both determinance and importance should be considered as
contributors to salience (Olson, Kanwar & Muderisoglu 1979).

The notion of attribute salience, although still tied to the context
of choice (in consumer research), has been discussed with conceptual/
theoretical concerns in mind. Broadly, attribute salience can be viewed
as the activation level of information in memory. Salience has been
defined as the "activation potential of stored knowledge, that is, the
likelihood that an item of knowledge, such as a belief about a product
attribute, will be activated from memory for use in some cognitive
process" (Olson, Kanwar & Muderisoglu 1979, pg 288). The most common
operationalization of salience has been to ask consumers to list the
attributes that come to mind in the context of choosing a particular
product (Olson & Muderisoglu 1979). Unfortunately, the use of this
notion of salience in consumer research is still constrained to the
context of stimulus-based choice. Subsequently, the choice literature
has stressed the need to consider only "salient" attributes in the
context of predicting multi-attribute choice (e.g., Day 1972, Wilkie &
Pessemier 1973).

The notion of cuing attributes developed here is an attempt to
define attribute salience more specifically. Attributes that are
rendered salient (or activated) <u>during the retrieval stage</u> are defined as

cuing attributes. This distinction is important because as earlier chapters have pointed out the factors that determine salience and therefore the attributes that are salient, may well be different at the retrieval and evaluation stages. Diagnosticity, goal-relevance and importance are some of the factors that could activate a cuing attribute. These same factors are also seen to affect salience of an attribute during choice (Olson, Kanwar & Muderisoglu 1979; Shanteau 1980). However the relative contribution of these factors may be different at the retrieval and evaluation stages. Thus attribute importance may lead to salience during choice, while diagnosticity may lead to salience during retrieval. As a result, cuing attributes may be a subset of the attributes that are salient during choice or may in fact be different altogether.

In summary, the effect of cuing attributes on retrieval and choice need to be differentiated from the notions of attribute importance, determinance and salience. Separate experiments will be used to determine whether this concept is worthy of further examination and whether retrieval engenders different choice processes than those commonly discussed in the choice context.

<u>External Influences and Choice</u>

The view of the consideration set as mediating the processes of retrieval and choice also provides a novel perspective on the role of external influences on choice. It may well be the case that a number of external influences discussed in consumer behavior have an important effect on retrieval and definition of the consideration set. For

instance, social influence processes such as those of the family or peer group, may work through defining the set of brands considered.

The choice model developed here is useful in identifying the important effect of external influences on retrieval and thereby on choice.

## Usage-situational influences

In this dissertation the usage-situation has been chosen as one of the important examples of external influences. The usage-situation has been widely researched in consumer behavior and is currently believed to be an important and consistent influence on consumer choice. Recent research has established the importance of considering the usage-situation in explaining consumer choice behavior (e.g., Belk 1974, 1975 a, b; Lutz & Kakkar 1975, 1976). Consumers have been shown to seek different benefits from different situations and consequently to perceive different products as being appropriate for each situation (e.g., Belk 1974, 1979; Berkowitz, Ginter & Talarzyk 1977; Day, Shocker & Srivastava 1979; Ptacek & Shanteau 1979; Srivastava, Shocker & Day 1978; Woodside, Bearden & Clokey 1977). Currently, usage-situations are believed to influence choice probabilities by affecting the importance weights of attributes in a multi-attribute framework. That is, the weight given to a particular dimension (for choice) is believed to be influenced by the intended usage (e.g., Bearden & Woodside 1976; Berkowitz, Ginter & Talarzyk 1977; Miller 1975; Miller & Ginter 1979). Accordingly, including the situational variable and assessing the Situation x Attribute interaction is seen to significantly increase the variance

explained in attitudes and behavioral intentions across situations and brands.

In this dissertation it is suggested that the consumer choice process be viewed as consisting of the two stages of evocation and evaluation. From this perspective the usage-situation could have an important effect both at the stage where the consumer is retrieving brands for inclusion in the consideration set _and_ at the stage where he is making a choice from this set. Thus usage-situations may selectively activate certain sets of brands that define the consumer's retrieval set and are then included in the set which the consumer considers for choice.

A recent stream of research has developed in greater detail the notion that "customers may develop sets of products for consideration based on the perceived appropriateness of their functional attributes for the intended usage" (Srivastava, Alpert & Shocker 1984, pg 32). Accordingly, the authors discuss the possibility that different situations are likely to lead to different consideration sets and consequently to multiple choices. In fact Srivastava (1981) posits that the usage-situation may make certain attributes more _salient_. However, the notion of salience Srivastava et al. discuss, is really attribute salience during choice. As the previous discussion indicates, when looking at choice as consisting of retrieval processes it is necessary to distinguish between attribute salience during choice and attribute salience during retrieval (cuing attributes). Srivastava et al. reach the conclusion that environmental requirements dictate the "importance of product attributes" and that consumers "develop a product portfolio" that reflects the situations they expect to encounter (Srivastava 1980, pg

106). However, as discussed earlier, formation of a product portfolio or consideration set is likely to be more flexible and dependent on the accessibility of brands in a specific situation.

In summary, when a consumer is retrieving a set of brands for a specific usage, certain cuing attributes that are activated by the usage situation will guide retrieval and subsequently influence the contents of his consideration set.

Such cuing attributes may be a subset of, or even different from, the attributes that are evaluatively important to the consumer when he is making a final choice. Further, such cuing attributes serve to limit the consumer's retrieval and consideration sets to a small, specific set of brands.

Brands that have a high cuing value on these cuing attributes are most likely to be retrieved for a specific usage-situation. Accordingly, the probability that a brand will be retrieved increases as a function of the brand's cuing value. As a direct consequence, the probability that a brand will be a member of a consumer's consideration set increases as a function of its cuing value.

The effect of an increased probability of consideration on final brand choice probabilities will be mediated by relative preference for the brands included in the consumer's consideration set. A brand that is preferred over the others in the set will clearly benefit while a brand that is not evaluated favorably is less likely to benefit. If brand A is preferred to brand B but is not retrieved on a particular occasion, this increases the probability that the consumer will choose brand B. Thus, although the consumer prefers brand A, it may not be chosen because it

has a low value on the cuing attributes for the particular usage-situation.

## Marketer-controlled influences

Marketing stimuli, constantly perceived by the average consumer, are the second type of external influence considered in this dissertation. Advertising, point-of-purchase material, special displays, and coupons all serve to remind the consumer of specific brands that he could consider for purchase. Typically, research on the effectiveness of these various promotional methods has been restricted to measuring effects on the specific brand in question. Further, the effect of advertising and promotion on memory for brands has been seen in terms of increasing overall brand awareness, or the availability of the brand in long-term memory.

Marketing stimuli can have significant effects on the accessibility of brands on any particular purchase occasion. Thus advertising serves not only as a "reminder medium" that increases the availability of brand information, but also provides important retrieval cues to a consumer who relies on memory to retrieve a consideration set. On a particular purchase occasion, marketing stimuli could act to "prime" specific brands in memory.

Brand primes may also have a more general effect. When one specific brand is primed, it will lead to the activation of related material in memory. Exposure to advertising for one brand may then increase the accessibility of other, similar brands in working memory, and thus influence the probability that these other brands will be included in the consideration set. Such effects would then translate to choice depending

again on relative preference for the brands retrieved and included in the consideration set.

Chapters VI, VII, and VIII describe three experiments that were designed to test specific propositions arising from this discussion. Chapter IX develops the implications of the findings for marketing practice.

CHAPTER VI

EXPERIMENT ONE

## Description of Experiment

The basic purpose of Experiment One is to study the dynamics of usage-situational effects across memory-based and stimulus-based choice tasks. The study was designed to be a preliminary test of the various propositions arising out of Figure V-1, which outlines the differences that could exist between these two types of tasks. In addition the study serves as a pretest for Experiment Two, which directly manipulates the value of brands, on various attributes, in specific usage-situations. On the basis of the previous discussion, the following general predictions were made:

1. The set of brands within a product class, considered by a consumer for use in different situations, will vary within both memory-based and stimulus-based tasks.

2. The set of brands within a product class, considered by a consumer for use in a particular situation will vary between memory-based and stimulus-based tasks. As a consequence, brand choice probabilities will vary between these tasks.

3. The attributes that determine retrieval and choice in a memory-based task will be different from those that determine choice in a stimulus-based task.

## Outline of tasks

Subjects were required to perform all of four basic tasks in turn:

1. <u>Attribute Elicitation Task</u>: Subjects were presented with a usage-situation and a product class and asked to list the attributes that came to mind when they thought of choosing brands in the product class for the specific situation described.

2. <u>Stimulus-Based Task</u>: Subjects were presented with a number of brands in a product class and were required to indicate their preferences for these brands, within a specific usage-situation.

3. <u>Memory-Based Task</u>: Subjects were presented with a usage-situation and a product class and asked to list the brands that came to mind for the usage-situation described. Thereafter, they were required to indicate their preferences for the brands that they would consider within this set.

4. <u>Belief-Rating Task</u>: Subjects were required to rate a number of brands in a product class, in terms of how much they believed each brand possessed of specific attributes.

## Stimuli

A number of focus groups and pretests were run to select the stimuli for Experiment One. These pretests sought to determine:

1. Product classes for which brand choice is likely to vary by usage-situation.

2. Salient usage-situations within each such product class.

3. Salient attributes that consumers use to evaluate brands within each product class.

4. A list of brands within each product class, familiar to the subject population of interest.

The final list of stimuli chosen for the experiment consisted of six product classes, four usage-situations, and a large number of brands and attributes within each product class (see Appendix I).

The six product classes and the number of brands and attributes chosen were:

1. Restaurants            35 brands          10 attributes

2. Leisure Activities     24 products        11 attributes

3. Stores                 27 brands          10 attributes

4. Snack Foods            24 products        12 attributes

5. Gift Items             19 products        10 attributes

6. Non-Alcoholic          24 brands/         14 attributes
   Beverages              products

The stimulus list was exhaustive and all products and attributes that were salient to at least 75% of the subjects (in the pretests) were included. From the pretests, it appeared that when asked to name brands in a product class, subjects tended to respond at one of two levels. For the product classes of Restaurants and Stores, subjects listed specific brand names of the products they would use. For the product classes of Leisure Activities, Snack Foods and Gift Items, subjects listed names of product lines they would use, not differentiating among the brands available within these product lines. For Non-Alcoholic Beverages subjects listed the brand names of more popular beverages (e.g., Coke or Pepsi) but did not differentiate among brands in other beverage lines

(for instance they listed Coffee rather than Maxwell House, or Orange Juice instead of Minute Maid).

Although subjects could have been forced to think at one or the other level via explicit instructions, it was considered desirable to present the stimuli at the level that they naturally use, often referred to as the "basic level" in categorization research (Rosch 1975). Accordingly, the same structure that emerged in the pretests was used to present the stimuli to subjects in Experiment One. In subsequent discussions, the term "products" will be used to refer to both the brand and product line levels in a product class.

## Subjects

A total of 144 undergraduate students enrolled in an introductory marketing course at the University of Florida participated in Experiment One. Participants were recruited with posted request sheets. Those who participated were given one hour of experiment-participation credit, which, in part, fulfilled certain course requirements.

## Procedure

Each subject completed all four tasks-- first the attribute elicitation task, then the stimulus-based and memory-based tasks and finally the belief-rating task. Since subjects did all four tasks, care was taken to minimize carry-over between tasks. Clearly, a memory-based task would not be effective if a subject has just rated brands in the same product class. Similarly, listing of specific attributes may bias subjects towards retrieving brands high on those attributes. Thus, subjects performed each task for different product classes and different usage-situations within each product class. The six product classes were

split into three pairs. Each pair was constructed such that there was minimal overlap between the products/situations within the pair. Thus for instance, since the situation of "shopping at leisure" (for the product class of <u>Stores</u>) could share some common aspects with the product class of <u>Leisure Activities</u>, these were not included in the same pair. Similarly, since <u>Snack Foods</u> and <u>Restaurants</u> could conceivably overlap in some respects, these were kept apart. The three product class pairs used were:

1. Restaurants, Leisure Activities.

2. Stores, Snack Foods.

3. Gift Items, Non-Alcoholic Beverages.

Subjects completed the first task (attribute elicitation) for both product classes in one stimulus pair, then the stimulus-based task for a second pair and the memory-based task for the third stimulus pair. Further, order of presentation of stimulus pairs was counterbalanced across subjects. Finally, subjects completed the belief-rating task for one product class. For this task they were given the first product class they had encountered (in the attribute elicitation task). The attribute elicitation task is likely to have the least (if any) influence on subjects' subsequent ratings of products on various attributes, while the stimulus-based and memory-based task are likely to have a greater carry-over effect. Each subject completed the first three tasks for only one (randomly assigned) situation within a product class. The belief-rating task did not specify any situation, but obtained general product beliefs. There were 12 subjects in each product class/situation condition.

Further, 24 subjects completed the belief-rating task in each product class.

Attribute elicitation task.   The attribute elicitation task is detailed in Appendix IB-1.   Pretests indicated that subjects required about twenty seconds to list the attributes that were "top of mind" for a specific product class.   Accordingly, subjects were given a product class and a usage-situation and were given twenty seconds to list the attributes that described the products they might consider.   The instructions gave no indication that subjects might seek different attributes in different situations.   One practice trial was provided before the two product classes of interest were presented.

Stimulus-based task.   Instructions for the stimulus-based task are detailed in Appendix IB-2.   Subjects were presented with the product class, the usage-situation, and a list of products in the product class. They were required to rate their relative preference for these products (for the specific situation) on an eight point (Do not prefer at all---- -- Prefer very much) itemized-category scale.   They were asked to put a zero next to all products with which they were unfamiliar, and were given as much time as they needed for the rating task.   Again, while the specific usage-situation was mentioned, no indication was given that product preferences might vary across situations.

Memory-based task--retrieval set.   Subjects were given a product class and a usage-situation and asked to list the products that came to mind for that situation (Appendix IB-3).   The product class of rental cars was used for a practice trial.   Importantly, subjects were asked to

list all the products they could think of and were explicitly told not to consider whether or not they would actually choose these products for use. Again variation due to usage-situation was not mentioned.

The objective in this task was to obtain subjects' <u>retrieval sets</u> rather than their <u>consideration</u> or <u>choice sets</u>. To ensure that subjects did not have the opportunity to engage in much evaluation, they were given only twenty seconds for the task.

<u>Memory-based task--consideration and choice sets</u>. Once they had listed their retrieval sets for both product classes in the pair, subjects were asked to return to each product class and do the following:

(i)   First they were asked to circle any products that they would not even consider for choice in that situation.

(ii)  Then they were asked to rank the remaining products in order of their preference for choice in that situation.

<u>Belief-rating task</u>. Subjects were presented with the list of products from one product class and asked to rate the degree to which these products possessed each of a number of attributes (see Appendix IB-4).

Again, they used a zero to indicate unfamiliarity with a brand and rated the remaining brands on eight-point semantic differential scales. No time limit was imposed for this task.

## Results and Discussion

## Attribute elicitation task

The notion of "cuing attributes" discussed earlier suggests that certain attributes may be activated by the context, and may then serve to retrieve a consideration set for a specific usage-situation. The purpose of the elicitation task was to examine whether such cuing attributes could be listed directly by subjects. Subjects were given a specific usage-situation and were asked to list the attributes that described the brands in a product class, that they would use in that situation. It was hoped that subjects would list the attributes that served to retrieve brands for the situation.

However, the attribute elicitation task was not useful for the purpose of identifying cuing attributes. A variety of attributes was generated for each situation and the attributes listed were similar to those that subjects might provide if they were asked for the evaluatively important attributes in a particular situation. In retrospect, it is clear that the task that was given to subjects was quite similar to the typical task used in focus groups or depth interviews to generate important or salient attributes in a product class (cf., Olson, Kanwar & Muderisoglu 1979; Olson & Mudderisoglu 1979). For instance, in the product class of restaurants subjects proceeded to list the attributes "distance," "price," "quality," etc., in short, all the attributes that were identified as being important in the pretests.

The results of this task suggest that it may be difficult to measure "cuing attributes" directly for a number of reasons.

First, as the definition suggests, cuing attributes underlie brand retrieval. The process of retrieval may be even less "deliberate" than evaluation and subjects may not be able to list the attributes that were activated and served to retrieve a set of brands.

Second, during the typical choice process, retrieval and evaluation will follow each other in very quick succession and subjects may not be able to separate and report the cuing attributes from the evaluatively important attributes.

It is thus unlikely that direct measures such as the elicitation task will be able to identify the cuing attributes in a situation. Since the attribute elicitation task did not serve its intended purpose the results are not discussed in any greater detail.

Stimulus-based task

As a first step, it is necessary to verify whether the sets of products (within a product class), preferred by consumers vary across usage-situations. An Analysis of Variance was conducted on subjects' (stimulus-based) preference ratings for brands across usage-situations. Tables VI-1 to VI-6 present these results for each product class.

In all six product classes, the interaction of situations with brands is significant and contributes substantially to percentage of variance explained in subjects' preferences. In accordance with previous research (e.g., Belk 1974, 1975; Lutz & Kakkar 1975) the main effect of usage-situation explains comparatively less variance than do the main effects of brands across situations and the interaction of situations and brands.

TABLE VI-1

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS
PRODUCT CLASS: RESTAURANTS

Analysis of Variance

| Source | df | MS | F |
|---|---|---|---|
| Situation | 3 | 68.99 | 5.20* |
| Subj(Situation) | 44 | 13.27 | |
| Brand | 28 | 21.20 | 7.10* |
| Situation * Brand | 84 | 18.07 | 6.06* |
| Brand*Subj(Situation) | 1006[a] | 2.99 | |

* p < .01

[a] Since some subjects were not familiar with certain restaurants, their preference data for these restaurants was treated as missing data.

TABLE VI-2

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS
PRODUCT CLASS: LEISURE TIME ACTIVITIES

Analysis of Variance

| Source | df | MS | F |
|---|---|---|---|
| Situation | 3 | 146.10 | 11.75* |
| Subj(Situation) | 44 | 12.43 | |
| Brand | 22 | 39.37 | 13.99* |
| Situation * Brand | 66 | 18.30 | 6.50* |
| Brand*Subj(Situation) | 968 | 2.81 | |

* p < .01

TABLE VI-3

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS
PRODUCT CLASS: STORES

| Analysis of Variance | | | |
| --- | --- | --- | --- |
| Source | df | MS | F |
| Situation | 3 | 35.88 | 2.40** |
| Subj(Situation) | 44 | 14.92 | |
| Brand | 22 | 22.67 | 8.60* |
| Situation * Brand | 66 | 23.84 | 9.04* |
| Brand*Subj(Situation) | 882[a] | 2.64 | |

* p < .01; ** p< .10

[a] Since some subjects were not familiar with certain stores, their preference
data for these stores was treated as missing data.

TABLE VI-4

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS
PRODUCT CLASS: SNACK FOODS

| Analysis of Variance | | | |
| --- | --- | --- | --- |
| Source | df | MS | F |
| Situation | 3 | 75.36 | 5.36* |
| Subj(Situation) | 44 | 14.04 | |
| Brand | 23 | 40.60 | 11.10* |
| Situation * Brand | 69 | 14.17 | 3.88* |
| Brand*Subj(Situation) | 1012 | 3.65 | |

* p < .01

TABLE VI-5

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS

PRODUCT CLASS: GIFT ITEMS

| Analysis of Variance | | | |
|---|---|---|---|
| Source | df | MS | F |
| Situation | 2 | 66.07 | 3.75** |
| Subj(Situation) | 33 | 17.62 | |
| Brand | 18 | 38.67 | 11.80* |
| Situation * Brand | 36 | 12.38 | 3.78* |
| Brand*Subj(Situation) | 594 | 3.27 | |

* p< .01; ** p < .05

TABLE VI-6

SOURCES OF VARIANCE IN STIMULUS-BASED PREFERENCE RATINGS

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

| Analysis of Variance | | | |
|---|---|---|---|
| Source | df | MS | F |
| Situation | 3 | 18.35 | 0.67 |
| Subj(Situation) | 44 | 27.19 | |
| Brand | 23 | 21.65 | 4.69* |
| Situation * Brand | 69 | 15.31 | 3.31* |
| Brand*Subj(Situation) | 1012 | 4.61 | |

* p < .01

Memory-based task

The next step is to ascertain whether consumer's retrieval sets vary across usage-situations. As discussed previously, choice probabilities for a set of brands could vary across usage-situations for one of two reasons in memory-based choice. The consumer could either (a) retrieve the same set of brands for each situation and then choose different brands from among this set, or (b) retrieve a different set of brands for each situation.

To assess this second possibility, an analysis of variance was performed in which the dependent variable was dichotomous (1-0), reflecting only whether a brand was retrieved or not for a particular situation. Retrieval scores were computed for each brand in each situation by aggregating across subjects. This score reflects the number (proportion) of times the brand was recalled for that particular situation. A Chi-square analysis was then conducted for Brands X Usage-Situations, for each product class (Tables VI-7 to VI-12). For all product classes the Chi-square value is highly significant indicating that brand retrieval is dependent upon the situation for which such retrieval occurs. Since cell frequencies are very low for certain products, the likelihood ratio chi-square test is more appropriate (Hays 1963), and has been reported as well.

The results support Prediction 1 that in a memory-based task, consumer's retrieval sets vary across usage-situations. The consumer does not retrieve the same set of brands and choose from among them, but rather, appears to retrieve and consider a different set of brands for each situation.

TABLE VI-7

TABLE OF PRODUCT BY USAGE-SITUATION: RESTAURANTS

USAGE-SITUATIONS

| PRODUCTS | LUNCH | DINNER | LATE NIGHT | SPECIAL OCCASION |
|---|---|---|---|---|
| Bennigan's | 2 | 3 | 1 | 6 |
| MacDonald's | 11 | 7 | 7 | 0 |
| Joe's Deli | 3 | 3 | 3 | 0 |
| Brown Derby | 0 | 1 | 2 | 7 |
| Steak & Ale | 0 | 1 | 1 | 5 |
| Great Wall | 1 | 1 | 0 | 3 |
| Cozzoli's | 1 | 2 | 0 | 0 |
| Leonardo's | 1 | 1 | 0 | 1 |
| Rax | 2 | 6 | 3 | 0 |
| Granny's | 3 | 1 | 0 | 0 |
| Copper Monkey | 4 | 0 | 1 | 0 |
| Sonny's BBQ | 0 | 1 | 0 | 0 |
| Hardee's | 0 | 2 | 3 | 0 |
| Tropical Treats | 0 | 1 | 0 | 0 |
| Red Lobster | 0 | 0 | 1 | 0 |
| Burrito Bros | 1 | 0 | 0 | 0 |
| Melting Pot | 0 | 0 | 0 | 3 |
| Uncle's Brownstone | 1 | 0 | 2 | 0 |
| Krystal's | 1 | 1 | 0 | 0 |
| Soveriegn | 0 | 0 | 0 | 4 |

TABLE VI-7--continued

|  | USAGE-SITUATIONS | | | |
|---|---|---|---|---|
| PRODUCTS | LUNCH | DINNER | LATE NIGHT | SPECIAL OCCASION |
| It can't be Yogurt | 1 | 0 | 1 | 0 |
| Western Sizzlin' | 0 | 2 | 1 | 0 |
| Skeeter's | 0 | 1 | 2 | 0 |
| Burger King | 8 | 7 | 5 | 0 |
| Wendy's | 3 | 4 | 2 | 0 |

| STATISTIC | DF | VALUE | PROB |
|---|---|---|---|
| CHI-SQUARE | 72 | 141.85 | 0.000 |
| LIKELIHOOD RATIO CHI-SQUARE | 72 | 150.23 | 0.000 |

TABLE VI-8

TABLE OF PRODUCT BY USAGE-SITUATION: LEISURE ACTIVITIES

USAGE-SITUATIONS

| PRODUCTS | FRIDAY NIGHT | LONG BREAK | SUNDAY EVENING | RAINING & MUGGY |
|---|---|---|---|---|
| Watching T.V | 3 | 1 | 8 | 11 |
| Partying | 5 | 1 | 1 | 0 |
| Sleeping | 0 | 2 | 4 | 2 |
| Talking on the Phone | 0 | 0 | 1 | 1 |
| Going dancing | 4 | 1 | 1 | 0 |
| Beach, Fishing | 0 | 8 | 1 | 0 |
| Board games | 3 | 0 | 0 | 8 |
| Individual Sports | 4 | 5 | 2 | 1 |
| Exercising | 1 | 4 | 6 | 3 |
| Skiing, Sightseeing | 0 | 8 | 0 | 0 |
| Team sports | 1 | 2 | 3 | 1 |
| Going to a restaurant | 5 | 1 | 5 | 1 |
| Visiting with friends | 0 | 1 | 2 | 0 |
| Sunbathing | 0 | 3 | 0 | 0 |
| Cooking | 1 | 0 | 0 | 0 |
| Movie | 10 | 2 | 7 | 3 |
| Listening to music | 1 | 0 | 2 | 4 |
| Drinking | 2 | 2 | 0 | 0 |

TABLE VI-8--continued

|  | USAGE-SITUATIONS | | | |
| PRODUCTS | FRIDAY NIGHT | LONG BREAK | SUNDAY EVENING | RAINING & MUGGY |
| --- | --- | --- | --- | --- |
| Doing a hobby | 0 | 0 | 0 | 1 |
| Reading | 0 | 2 | 3 | 3 |
| Shopping | 0 | 1 | 0 | 0 |

| STATISTIC | DF | VALUE | PROB |
| --- | --- | --- | --- |
| CHI-SQUARE | 60 | 146.06 | 0.000 |
| LIKELIHOOD RATIO CHI-SQUARE | 60 | 152.91 | 0.000 |

TABLE VI-9

TABLE OF PRODUCT BY USAGE-SITUATION: STORES

USAGE-SITUATIONS

| PRODUCTS | SOMETHING QUICKLY | FIXTURES FOR HOUSE | SPECIAL GIFT | LEISURE SHOPPING |
|---|---|---|---|---|
| WALMART | 2 | 6 | 1 | 0 |
| 7-11 | 9 | 0 | 0 | 0 |
| MAAS BROS. | 0 | 4 | 5 | 2 |
| K MART | 0 | 5 | 2 | 0 |
| ALBERTSON'S | 7 | 1 | 0 | 0 |
| SCOTTY'S | 0 | 2 | 0 | 0 |
| LI'L CHAMP | 6 | 0 | 0 | 0 |
| BURDINES | 2 | 4 | 9 | 9 |
| PIC'N'SAVE | 2 | 3 | 0 | 0 |
| ECKERD'S | 5 | 0 | 0 | 0 |
| SEARS | 0 | 9 | 5 | 3 |
| PUBLIX | 4 | 0 | 0 | 1 |
| BELK LINDSEY | 0 | 2 | 4 | 3 |
| ROBBY'S | 0 | 0 | 0 | 2 |
| J.C. PENNEY'S | 2 | 6 | 6 | 5 |
| WINN DIXIE | 3 | 0 | 0 | 0 |
| SPENCER'S | 0 | 0 | 2 | 0 |

| STATISTIC | DF | VALUE | PROB |
|---|---|---|---|
| CHI-SQUARE | 48 | 150.04 | 0.000 |
| LIKELIHOOD RATIO CHI-SQUARE | 48 | 163.71 | 0.000 |

TABLE VI-10

TABLE OF PRODUCT BY USAGE-SITUATION: SNACK FOODS

USAGE-SITUATIONS

| PRODUCTS | WEEKDAY AFTER SCHOOL | WATCHING T.V. | INTIMATE GET-TOGETHER | LONG ROAD TRIP BY CAR |
|---|---|---|---|---|
| POTATO CHIPS | 8 | 8 | 9 | 8 |
| CHEESE & CRACKERS | 1 | 2 | 3 | 1 |
| ICE CREAM | 2 | 4 | 0 | 0 |
| FRUITS | 3 | 1 | 1 | 4 |
| COOKIES | 5 | 3 | 2 | 5 |
| NUTS | 0 | 3 | 5 | 2 |
| CANDY | 7 | 4 | 1 | 4 |
| HORS D'OEUVRES | 0 | 0 | 3 | 0 |
| PRETZELS | 1 | 3 | 7 | 6 |
| SANDWICHES, BREAD ROLLS | 0 | 5 | 1 | 3 |
| POPCORN | 4 | 4 | 0 | 1 |
| SODA | 1 | 2 | 3 | 4 |
| PIZZA | 2 | 0 | 0 | 0 |
| FRENCH FRIES | 1 | 1 | 0 | 0 |
| BROWNIES | 0 | 1 | 0 | 1 |
| NACHOS | 0 | 3 | 1 | 0 |
| GRANOLA BARS | 0 | 1 | 0 | 1 |
| FROZEN YOGURT | 5 | 2 | 0 | 0 |

| STATISTIC | DF | VALUE | PROB |
|---|---|---|---|
| CHI-SQUARE | 51 | 81.25 | 0.012 |
| LIKELIHOOD RATIO CHI-SQUARE | 51 | 90.74 | 0.001 |

## TABLE VI-11

### TABLE OF PRODUCT BY USAGE-SITUATION: GIFT ITEMS

|  | USAGE-SITUATIONS | | |
|---|---|---|---|
| PRODUCTS | CLOSE FRIEND'S BIRTHDAY | CHEER UP A FRIEND | FRIEND LEAVING TOWN |
| DINNER PARTY | 2 | 0 | 0 |
| WINE, CHAMPAGNE | 1 | 2 | 2 |
| GREETING CARD | 1 | 8 | 4 |
| FLOWERS | 2 | 11 | 1 |
| CLOTHES | 10 | 0 | 4 |
| HOUSEHOLD APPLIANCES | 0 | 0 | 3 |
| CANDY | 0 | 6 | 1 |
| STUFFED ANIMALS | 1 | 5 | 1 |
| SPORTING GOODS | 1 | 1 | 0 |
| JEWELRY | 4 | 0 | 4 |
| BOOKS, MAGAZINES | 1 | 2 | 1 |
| SOUVENIERS | 1 | 0 | 3 |
| BALLOONS | 0 | 4 | 0 |
| STATIONERY | 0 | 0 | 2 |
| MONEY, CHECK | 5 | 0 | 1 |
| COSMETICS | 3 | 0 | 0 |
| RECORD ALBUMS | 5 | 2 | 0 |
| FOOD | 0 | 4 | 0 |

| STATISTIC | DF | VALUE | PROB |
|---|---|---|---|
| CHI-SQUARE | 34 | 81.25 | 0.000 |
| LIKELIHOOD RATIO CHI-SQUARE | 34 | 107.77 | 0.000 |

TABLE VI-12

TABLE OF PRODUCT BY USAGE-SITUATION: NON-ALCOHOLIC BEVERAGES

| PRODUCTS | USAGE-SITUATIONS | | | |
|---|---|---|---|---|
| | LUNCH | BREAKFAST | STUDYING LATE NIGHT | WILD PARTY |
| DIET COKE | 2 | 1 | 3 | 2 |
| COFFEE | 1 | 2 | 4 | 0 |
| WATER | 3 | 5 | 3 | 2 |
| GATORADE | 1 | 1 | 2 | 1 |
| PEPSI | 7 | 1 | 3 | 1 |
| HOT CHOCOLATE | 1 | 0 | 0 | 0 |
| ORANGE JUICE | 5 | 11 | 4 | 1 |
| GINGER ALE | 0 | 0 | 0 | 3 |
| ICED TEA | 2 | 3 | 1 | 1 |
| TAB | 1 | 0 | 2 | 1 |
| FRUITY SODAS | 3 | 0 | 3 | 0 |
| LEMONADE | 2 | 0 | 2 | 3 |
| SEVEN UP | 2 | 0 | 2 | 3 |
| TEA | 0 | 2 | 4 | 1 |
| APPLE JUICE | 1 | 5 | 0 | 0 |
| COKE | 10 | 1 | 7 | 10 |
| MILK | 3 | 6 | 2 | 1 |
| GRAPEFRUIT JUICE | 0 | 3 | 0 | 0 |
| SUNKIST | 1 | 0 | 1 | 0 |
| OTHER DIET SODAS | 0 | 0 | 3 | 1 |

TABLE VI-12--continued

|  | USAGE-SITUATIONS | | | |
| --- | --- | --- | --- | --- |
| PRODUCTS | LUNCH | BREAKFAST | STUDYING LATE NIGHT | WILD PARTY |
| ROOT BEER | 1 | 0 | 0 | 0 |
| DIET PEPSI | 1 | 0 | 1 | 0 |
| SPRITE | 6 | 0 | 3 | 4 |

| STATISTIC | DF | VALUE | PROB |
| --- | --- | --- | --- |
| CHI-SQUARE | 66 | 110.41 | 0.001 |
| LIKELIHOOD RATIO CHI-SQUARE | 66 | 118.34 | 0.000 |

At the same time, it is possible that certain highly familiar or frequently encountered products may be retrieved across all situations. Such products may come to mind directly whenever the product class is mentioned regardless of the usage situation. Overall brand familiarity (as opposed to situation-specific brand familiarity), may influence retrieval in some instances (Baker, Hutchinson, Moore & Nedungadi 1985; Barsalou 1985).

To study the effects of overall brand familiarity more closely, the mean retrieval scores of brands across situations was examined. Table VI-13 lists the top brands in each product class, retrieved for each usage-situation. Only brands that were recalled by at least 25% (four out of twelve) of the subjects are listed.

Interestingly, with the exception of Potato Chips in the Snack Food product class, no single product was consistently recalled across all usage-situations. A number of products were recalled in three of four situations. These products are underlined in the tables. The fact that some of the products were recalled in more than one situation may, however, also have to do with the fact that the situations used in the study shared some properties in common and may not be due to overall brand familiarity per se. These results suggest that overall brand familiarity or brand awareness may not be sufficient for a brand to be retrieved across usage-situations. Accessibility in a specific situation would depend on a brand's association with situation specific cues that are important for retrieval.

## TABLE VI-13

### TOP BRANDS RETRIEVED FOR EACH PRODUCT CLASS/USAGE SITUATION

RESTAURANTS:

#### SITUATIONS

| LUNCH | DINNER | AFTER DINNER | SPECIAL OCCASION |
|---|---|---|---|
| MacDonald's | MacDonald's | MacDonald's | Brown Derby |
| Burger King | Burger King | Burger King | Bennigans |
| Copper Monkey | Rax | Joe's Deli | Steak & Ale |
| Joe's Deli | Wendy's | Rax | Sovereign |
| Granny's | Joe's Deli | Hardees | Great Wall |
| Wendy's | Bennigans | | Melting Pot |

LEISURE ACTIVITIES:

#### SITUATIONS

| FRIDAY NIGHT | LONG BREAK | SUNDAY EVENING | RAINING & MUGGY |
|---|---|---|---|
| Go to Game | Go to the beach | Watch T.V. | Watch T.V. |
| Party | Sightseeing | Go to Game | Board Game |
| Shopping | Individual sports | Exercising | Movie |
| Dancing | Exercising | Shopping | Exercising |
| Individual sport | Visit friends | Group sports | Hobby |
| Watch T.V. | | Telephone | Go to Game |

TABLE VI-13--continued

STORES:

SITUATIONS

| SOMETHING QUICK | HOME FIXTURES | SPECIAL GIFT | LEISURE SHOPPING |
|---|---|---|---|
| 7 - 11 | Sears | Burdines | Burdines |
| Albertson's | Walmart | J.C.Penney's | J.C.Penney's |
| Lil Champ | J.C.Penney's | Sears | Sears |
| Eckerds drugs | K - Mart | Maas Brothers | Belk Lindsey's |
| Publix | Pic-N-Save | Belk Lindsey's | |

SNACK FOODS:

SITUATIONS

| WEEKDAY | WATCHING T.V. | GET-TOGETHER | ROAD TRIP |
|---|---|---|---|
| Potato chips | Potato chips | Potato chips | Potato chips |
| Candy | Ice cream | Pretzels | Pretzels |
| Frozen yoghurt | Candy | Nuts | Cookies |
| Cookies | Popcorn | Hors d'oevres | Fruits |
| Popcorn | Sandwiches | Cheese & Crackers | Soda |
| Fruits | Cookies | Soda | Candy |
| | Pretzels | | |

TABLE VI-13--continued

GIFT ITEMS:

## SITUATIONS

| BIRTHDAY GIFT | GET-WELL GIFT | GOING-AWAY GIFT |
|---|---|---|
| Clothes | Flowers | Greeting Cards |
| Money/Check | Get well Cards | Clothes |
| Records | Candy | Jewelry |
| Jewelry | Stuffed Animals | Household Appliances |
| Cosmetics | Balloons | Souveniers |


NON-ALCOHOLIC BEVERAGES:

## SITUATIONS

| LUNCH | BREAKFAST | LATE NIGHT | PARTY |
|---|---|---|---|
| Coca Cola | Orange Juice | Coca Cola | Coca Cola |
| Pepsi | Other Fruit Juices | Orange Juice | Other Fruit Juices |
| Sprite | Milk | Coffee | Sprite |
| Orange Juice | Tomato Juice | Pepsi | Ginger Ale |
| Milk | Apple Juice | Diet sodas | Lemonade |

## Comparison of stated brand preferences in memory-based and stimulus-based tasks

As discussed earlier, the dynamics of retrieval processes may lead to choice probabilities being different between memory-based and stimulus-based tasks. To test this prediction, subjects' preferences for products in the memory-based task were compared to preference ratings in the stimulus-based task, for all products in the same situation.

In the memory-based task, once subjects had provided a consideration set, they were asked to indicate their rank order of preferences for the products in this set. In the stimulus-based task subjects were required to indicate their preferences for all products in the product class. To facilitate comparison across these tasks, consideration sets were computed for subjects in the stimulus-based task. Each subject's preference ratings were first converted into a rank order of preference. Thereafter, brands that were ranked better than 4.5 were classified as belonging in the subject's (stimulus-based) consideration set. Since brands were often tied in terms of preference, this led to an average of between 4 and 5 brands being included in each subject's stimulus-based consideration set. This number is roughly comparable to the average number of brands (between 3 to 5), considered by subjects in the memory-based task.

Preference ranks for brands within the (memory-based) consideration sets were now compared with the computed preference ranks for brands in the stimulus-based consideration sets. To eliminate range differences these ranks were constrained to be between zero and one. The results are summarized in Table VI-14 for each product class and usage-situation in turn.

TABLE VI-14

COMPARISONS OF BRAND PREFERENCE IN THE MEMORY-BASED AND STIMULUS-BASED TASKS

| PRODUCT CLASS | SITUATION 1 | SITUATION 2 | SITUATION 3 | SITUATION 4 |
|---|---|---|---|---|
| RESTAURANTS $(23,506)$[a] | $1.70$[b] $(0.02)$[c] | $1.43$ $(0.09)$ | $1.81$ $(0.01)$ | $1.13$ $(0.30)$ |
| LEISURE-TIME ACTIVITIES $(22,484)$ | $2.85$ $(0.001)$ | $0.92$ $(0.56)$ | $2.50$ $(0.001)$ | $3.54$ $(0.001)$ |
| STORES $(22,484)$ | $0.63$ $(0.90)$ | $1.64$ $(0.03)$ | $2.64$ $(0.001)$ | $1.07$ $(0.38)$ |
| SNACK FOODS $(23,506)$ | $2.41$ $(0.001)$ | $1.45$ $(0.08)$ | $3.61$ $(0.001)$ | $1.27$ $(0.18)$ |
| GIFT-ITEMS $(18,396)$ | $5.18$ $(0.001)$ | $1.58$ $(0.06)$ | - | $4.81$ $(0.001)$ |
| NON-ALCOHOLIC BEVERAGES $(23,506)$ | $2.81$ $(0.001)$ | $5.32$ $(0.001)$ | $0.93$ $(0.55)$ | $1.81$ $(0.01)$ |

[a] Degrees of freedom for the reported F-ratios.

[b] F-ratio for the Task*Brand Interaction.

[c] Prob > F.

The table indicates the magnitude and significance of the F test associated with the Task*Brand interaction. A significant interaction indicates that subjects' preferences for brands varied between the memory-based and stimulus-based tasks. Of twenty-four such tests, fifteen are significant (p<.05) and three marginally significant (p<.10). These results indicate that brand preferences vary significantly between memory-based and stimulus-based tasks. The results support Prediction 2 and suggest that in a number of situations, brand choice probabilities could vary between these tasks.

Attributes that underlie retrieval and preference

A further objective of the study was to identify the attributes that underlie retrieval (cuing attributes) and preference and examine whether these attributes (or the weightage given to them) varied depending on the type of task. In the attribute rating task 24 subjects rated the entire list of products in one product class on their possession of specific attributes. Subjects who performed either the memory-based or stimulus-based tasks for a product class did not provide the attribute ratings for that product class. As a result, individual subject analysis (regressing subjects preference or retrieval scores on their attribute ratings) could not be conducted. Instead, average belief-scores for the products in each product class were computed across all 24 subjects and these average scores were used as a measure of each brand's possession of specific attributes.

Subjects were required to rate brands on attributes that were salient for all four situations in a product class. However only a subset of these attributes were relevant for any specific situation.

PROC REG (SAS 1985) and factor analysis were used to test for multicollinearity and to retain attributes that were meaningful and uncorrelated. For all six product classes, correlations among attribute ratings were quite high. Some condition indices (Belsley, Kuh & Welsch 1980) were greater than 30 in all product classes. Based on these results, only a small subset of attributes was selected for each situation. For instance price and quality were correlated in a number of product classes. So as to avoid problems of multicollinearity only one of a pair of highly correlated attributes was retained for any specific situation. Thus for instance, while "price" would be a more salient attribute for restaurants when "going to lunch," "quality" would likely be more salient for the situation of "celebrating a special occasion."

The process of selecting attributes was essentially based on intuition and was admittedly somewhat arbitrary in this instance. However the objective in subsequent analyses is not to find the "best model" for each usage-situation but to examine whether, given a specific set of attributes, the attributes that underlie retrieval during memory-based choice are different from those that are considered important in stimulus-based choice.

Cuing attributes vs important attributes

Since the dependent variable of retrieval was dichotomous, both regression analysis and stepwise discriminant analysis were used to analyze the data. Discriminant analysis will identify those attributes that best discriminate between the set of brands that were retrieved/preferred and those that were not retrieved/not preferred in a given situation. Since the results of the regression and discriminant

analyses were very similar, the results of the discriminant analysis are reported below.

In the memory-based condition each brand in a product class possessed a Retrieval score which indicated whether or not the brand had been <u>retrieved</u> for a specific situation. As discussed earlier, to facilitate comparison, consideration sets were also computed for each subject in the stimulus-based condition. Thus each brand also possessed a Preference score which indicated whether or not the brand had been <u>preferred</u> in the same situation.

Stepwise Discriminant Analysis (SAS 1985) was used to identify the cuing and important attributes in the memory-based and stimulus-based tasks respectively. The method of stepwise selection was employed. At each step, variables in the model are examined in terms of specified significance criteria and are then retained, or removed from the model. The significance levels for entry into, and exit from the model were set at $p < .05$. Tables VI-15 to VI-37 present the results of the analysis for each product class, usage situation, and choice task in turn. The tables also list the subset of attributes that were used in each situation.

The analysis indicates that in many product classes, the attributes that underlie retrieval may be a subset of, and often even different from, the attributes that underlie stimulus-based choice. As hypothesized earlier, certain cuing-attributes could be more central to memory-based brand retrieval than to stimulus-based choice.

It must be noted however, that the nature of the data and analyses do not justify any strong conclusions. First, the analysis only identifies the attributes that significantly discriminate between the

TABLE VI-15

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: RESTAURANTS

SITUATION: YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH.

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 4.25736 | 3.27247 | NUTRITIONAL VALUE |
| A2 | 4.13384 | 2.99203 | DISTANCE |
| A5 | 4.15309 | 3.13812 | PRICE |
| A6 | 5.42122 | 5.18721 | QUALITY OF SERVICE |
| A9 | 3.41725 | 2.15213 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**}2$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|---------|-----------|--------|---|
| 1 | A2 | | 1 | 0.1073 | 32.945 | 0.0001 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**}2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|---------|------|----------|-----------|-------|
| A1 | 0.0031 | 0.838 | 0.3608 | 0.5383 | NUTRITIONAL VALUE |
| A5 | 0.0002 | 0.059 | 0.8085 | 0.6163 | PRICE |
| A6 | 0.0003 | 0.093 | 0.7601 | 0.8180 | QUALITY OF SERVICE |
| A9 | 0.0009 | 0.237 | 0.6264 | 0.5377 | FORMALITY OF ATMOSPHERE |

TABLE VI-15--continued

PRODUCT CLASS: RESTAURANTS

SITUATION: YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH.

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.29766 | 3.31366 | NUTRITIONAL VALUE |
| A2 | 4.16024 | 3.15871 | DISTANCE |
| A5 | 4.21096 | 3.04133 | PRICE |
| A6 | 5.43302 | 5.18679 | QUALITY OF SERVICE |
| A9 | 3.54334 | 1.72136 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R**2$ | F STATISTIC | PROB > F | |
|------|------------------|---------|-----------|----------------|-------------|----------|---|
| 1 | A9 | | 1 | 0.1477 | 41.764 | 0.0001 | FORMALITY |
| 2 | A5 | | 2 | 0.0447 | 11.224 | 0.0009 | PRICE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R**2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|----------------|------|----------|-----------|-------|
| A1 | 0.0081 | 1.953 | 0.1636 | 0.0521 | NUTRITIONAL VALUE |
| A2 | 0.0149 | 3.612 | 0.0586 | 0.0488 | DISTANCE |
| A6 | 0.0022 | 0.538 | 0.4640 | 0.0578 | QUALITY OF SERVICE |

TABLE VI-16

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: RESTAURANTS

SITUATION: YOU ARE AT HOME AND FEELING TOO LAZY TO FIX SOMETHING FOR DINNER

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|------|------|----------|
| A1 | 4.22330 | 3.55309 | NUTRITIONAL VALUE |
| A2 | 4.11471 | 3.16752 | DISTANCE |
| A4 | 4.89268 | 4.15411 | QUALITY OF FOOD |
| A6 | 5.41597 | 5.23296 | QUALITY OF SERVICE |
| A8 | 4.50879 | 3.75076 | QUALITY OF ATMOSPHERE |
| A9 | 3.40725 | 2.26412 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----|--------|-----------|--------|----------|
| 1 | A2 | | 1 | 0.0759 | 22.491 | 0.0001 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|------|------|--------|-----------|-------|
| A1 | 0.0001 | 0.028 | 0.8665 | 0.5383 | NUTRITIONAL VALUE |
| A4 | 0.0013 | 0.369 | 0.5441 | 0.6420 | QUALITY OF FOOD |
| A6 | 0.0005 | 0.134 | 0.7147 | 0.8180 | QUALITY OF SERVICE |
| A8 | 0.0000 | 0.000 | 0.9825 | 0.6601 | QUALITY OF ATMOSPHERE |
| A9 | 0.0000 | 0.002 | 0.9628 | 0.5377 | FORMALITY OF ATMOSPHERE |

TABLE VI-16--continued


PRODUCT CLASS: RESTAURANTS

SITUATION: YOU ARE AT HOME AND FEELING TO LAZY TO FIX SOMETHING FOR DINNER

DEPENDENT VARIABLE: PREFERENCE


CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|---|---|---|---|
| A1 | 3.89467 | 4.57177 | NUTRITIONAL VALUE |
| A2 | 3.86143 | 4.12041 | DISTANCE |
| A4 | 4.54336 | 5.20986 | QUALITY OF FOOD |
| A6 | 5.31249 | 5.67850 | QUALITY OF SERVICE |
| A8 | 4.12202 | 4.78378 | QUALITY OF ATMOSPHERE |
| A9 | 2.86505 | 3.78040 | FORMALITY OF ATMOSPHERE |


STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A6 | | 1 | 0.0736 | 16.214 | 0.0001 | QUALITY OF SERVICE |

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A1 | 0.0043 | 0.871 | 0.3519 | 0.4916 | NUTRITIONAL VALUE |
| A2 | 0.0005 | 0.096 | 0.7575 | 0.8136 | DISTANCE |
| A4 | 0.0017 | 0.340 | 0.5607 | 0.4195 | QUALITY OF FOOD |
| A8 | 0.0004 | 0.086 | 0.7695 | 0.5956 | QUALITY OF ATMOSPHERE |
| A9 | 0.0033 | 0.670 | 0.4138 | 0.6417 | FORMALITY OF ATMOSPHERE |

TABLE VI-17

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: RESTAURANTS

SITUATION: IT IS LATE AT NIGHT AND YOU HAVE FINISHED EATING DINNER.

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 4.19138 | 3.71615 | NUTRITIONAL VALUE |
| A2 | 4.05825 | 3.49844 | DISTANCE |
| A5 | 4.09593 | 3.49939 | PRICE |
| A6 | 5.39346 | 5.39966 | QUALITY OF SERVICE |
| A9 | 3.34962 | 2.57046 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A2 | | 1 | 0.0229 | 6.434 | 0.0117 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-----|----------|-----------|-------|
| A1 | 0.0005 | 0.130 | 0.7187 | 0.5383 | NUTRITIONAL VALUE |
| A5 | 0.0010 | 0.277 | 0.5994 | 0.6163 | PRICE |
| A6 | 0.0057 | 1.575 | 0.2105 | 0.8180 | QUALITY OF SERVICE |
| A9 | 0.0004 | 0.110 | 0.7409 | 0.5377 | FORMALITY OF ATMOSPHERE |

TABLE VI-17--continued

PRODUCT CLASS: RESTAURANTS

SITUATION: IT IS LATE AT NIGHT AND YOU HAVE FINISHED EATING DINNER

DEPENDENT VARIABLE:  PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|--|
| A1 | 3.92902 | 4.63717 | NUTRITIONAL VALUE |
| A2 | 3.88196 | 4.25793 | DISTANCE |
| A5 | 3.76974 | 4.68793 | PRICE |
| A6 | 5.33018 | 5.69346 | QUALITY OF SERVICE |
| A9 | 2.91921 | 4.11167 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|--|
| 1 | A6 | | 1 | 0.0623 | 15.748 | 0.0001 | QUALITY OF SERVICE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A1 | 0.0079 | 1.887 | 0.1708 | 0.5063 | NUTRITIONAL VALUE |
| A2 | 0.0009 | 0.212 | 0.6460 | 0.8082 | DISTANCE |
| A5 | 0.0156 | 3.743 | 0.0542 | 0.6229 | PRICE |
| A9 | 0.0155 | 3.714 | 0.0551 | 0.6399 | FORMALITY OF ATMOSPHERE |

## TABLE VI-18

### STEPWISE DISCRIMINANT ANALYSIS
### ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: RESTAURANTS

SITUATION: IT IS A SPECIAL OCCASION AND YOU WANT TO CELEBRATE IT.

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 4.00300 | 5.33700 | NUTRITIONAL VALUE |
| A2 | 3.94502 | 4.48216 | DISTANCE |
| A4 | 4.64748 | 6.14065 | QUALITY OF FOOD |
| A6 | 5.32924 | 5.94637 | QUALITY OF SERVICE |
| A8 | 4.23138 | 6.00902 | QUALITY OF ATMOSPHERE |
| A9 | 2.99410 | 5.62540 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| | VARIABLE | | NUMBER | PARTIAL | F | PROB > | |
|------|---------|---------|--------|---------|-----------|--------|---|
| STEP | ENTERED | REMOVED | IN | R**2 | STATISTIC | F | |
| 1 | A9 | | 1 | 0.1624 | 53.141 | 0.0001 | FORMALITY |
| 2 | A2 | | 2 | 0.0355 | 10.042 | 0.0017 | DISTANCE |
| 3 | A6 | | 3 | 0.0160 | 4.415 | 0.0365 | QUALITY OF SERVICE |

VARIABLES NOT ENTERED:

| | PARTIAL | | | | |
|----------|---------|-------|----------|-----------|-----------------------|
| VARIABLE | R**2 | F | PROB > F | TOLERANCE | LABEL |
| A1 | 0.0000 | 0.002 | 0.9687 | 0.2256 | NUTRITIONAL VALUE |
| A4 | 0.0002 | 0.054 | 0.8165 | 0.1907 | QUALITY OF FOOD |
| A8 | 0.0064 | 1.754 | 0.1865 | 0.1371 | QUALITY OF ATMOSPHERE |

TABLE VI-18--continued

PRODUCT CLASS: RESTAURANTS

SITUATION: IT IS A SPECIAL OCCASION AND YOU WANT TO CELEBRATE IT.

DEPENDENT VARIABLE:  PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 3.79310 | 5.33516 | NUTRITIONAL VALUE |
| A2 | 3.75552 | 4.74609 | DISTANCE |
| A4 | 4.41203 | 6.10675 | QUALITY OF FOOD |
| A6 | 5.28176 | 5.86584 | QUALITY OF SERVICE |
| A8 | 3.95022 | 6.00066 | QUALITY OF ATMOSPHERE |
| A9 | 2.55158 | 5.69015 | FORMALITY OF ATMOSPHERE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A9 | | 1 | 0.3863 | 152.967 | 0.0001 | FORMALITY |
| 2 | A8 | | 2 | 0.0250 | 6.204 | 0.0134 | QUALITY OF ATMOSPHERE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|---|----------|-----------|-------|
| A1 | 0.0013 | 0.317 | 0.5739 | 0.1311 | NUTRITIONAL VALUE |
| A2 | 0.0128 | 3.131 | 0.0781 | 0.1319 | DISTANCE |
| A4 | 0.0031 | 0.761 | 0.3840 | 0.1179 | QUALITY OF FOOD |
| A6 | 0.0026 | 0.629 | 0.4284 | 0.1471 | QUALITY OF SERVICE |

TABLE VI-19

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS FRIDAY NIGHT

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|---|---|---|---|
| A1 | 6.46306 | 6.56221 | RELAXATION |
| A2 | 4.22181 | 4.03557 | SOCIAL NATURE |
| A4 | 3.83793 | 4.15776 | LOCATION |
| A7 | 4.64518 | 4.27981 | AMOUNT OF TIME TAKEN |
| A10 | 3.25829 | 3.66105 | AMOUNT OF PLANNING |
| A11 | 5.42142 | 5.97130 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**}2$ | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A11 | | 1 | 0.0248 | 6.958 | 0.0088 | AMOUNT OF FUN |
| 2 | A7 | | 2 | 0.0416 | 11.858 | 0.0007 | AMOUNT OF TIME |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**}2$ | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A1 | 0.0018 | 0.485 | 0.4869 | 0.7118 | RELAXATION |
| A2 | 0.0008 | 0.226 | 0.6348 | 0.9099 | SOCIAL NATURE |
| A4 | 0.0033 | 0.914 | 0.3399 | 0.8119 | LOCATION |
| A10 | 0.0133 | 3.668 | 0.0565 | 0.8366 | AMOUNT OF PLANNING |

TABLE VI-19--continued

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS FRIDAY NIGHT

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|--|
| A1  | 6.45821 | 6.56645 | RELAXATION |
| A2  | 4.22399 | 4.05970 | SOCIAL NATURE |
| A4  | 3.85863 | 4.00311 | LOCATION |
| A7  | 4.55672 | 4.75673 | AMOUNT OF TIME TAKEN |
| A10 | 3.27984 | 3.48722 | AMOUNT OF PLANNING |
| A11 | 5.32063 | 6.33722 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**}2$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|---------|-----------|--------|--|
| 1 | A11 | | 1 | 0.0997 | 30.357 | 0.0001 | AMOUNT OF FUN |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**}2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|---------|-------|----------|-----------|-------|
| A1  | 0.0099 | 2.741 | 0.0990 | 0.9754 | RELAXATION |
| A2  | 0.0066 | 1.811 | 0.1795 | 0.9851 | SOCIAL NATURE |
| A4  | 0.0043 | 1.166 | 0.2811 | 0.8682 | LOCATION |
| A7  | 0.0001 | 0.031 | 0.8608 | 0.9330 | AMOUNT OF TIME TAKEN |
| A10 | 0.0023 | 0.628 | 0.4288 | 0.9017 | AMOUNT OF PLANNING |

TABLE VI-20

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: LEISURE TIME ACTIVITIES

SITUATION: YOU HAVE A LONG BREAK AHEAD OF YOU

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|--|
| A1  | 6.54508 | 6.12073 | RELAXATION |
| A2  | 4.06411 | 4.88403 | SOCIAL NATURE |
| A4  | 3.82307 | 4.20701 | LOCATION |
| A7  | 4.51535 | 4.99756 | AMOUNT OF TIME TAKEN |
| A10 | 3.21037 | 3.87711 | AMOUNT OF PLANNING |
| A11 | 5.38491 | 6.11380 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R**2$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|--|
| 1 | A11 | | 1 | 0.0471 | 13.531 | 0.0003 | AMOUNT OF FUN |
| 2 | A7  | | 2 | 0.0271 |  7.590 | 0.0063 | AMOUNT OF TIME |
| 3 | A2  | | 3 | 0.0189 |  5.238 | 0.0229 | SOCIAL NATURE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R**2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|---|----------|-----------|-------|
| A1  | 0.0001 | 0.014 | 0.9052 | 0.5461 | RELAXATION |
| A4  | 0.0007 | 0.196 | 0.6580 | 0.7241 | LOCATION |
| A10 | 0.0005 | 0.135 | 0.7133 | 0.4896 | AMOUNT OF PLANNING |

TABLE VI-20--continued

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: YOU HAVE A LONG BREAK AHEAD OF YOU

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1  | 6.52650 | 6.23834 | RELAXATION |
| A2  | 4.07136 | 4.79636 | SOCIAL NATURE |
| A4  | 3.83778 | 4.11085 | LOCATION |
| A7  | 4.50089 | 5.03723 | AMOUNT OF TIME TAKEN |
| A10 | 3.21333 | 3.82010 | AMOUNT OF PLANNING |
| A11 | 5.35597 | 6.20829 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A11 | | 1 | 0.0678 | 19.942 | 0.0001 | AMOUNT OF FUN |
| 2 | A7 | | 2 | 0.0347 | 9.827 | 0.0019 | AMOUNT OF TIME |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A1  | 0.0002 | 0.062 | 0.8041 | 0.7118 | RELAXATION |
| A2  | 0.0127 | 3.493 | 0.0627 | 0.9099 | SOCIAL NATURE |
| A4  | 0.0004 | 0.108 | 0.7422 | 0.8119 | LOCATION |
| A10 | 0.0015 | 0.398 | 0.5285 | 0.8366 | AMOUNT OF PLANNING |

TABLE VI-21

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS SUNDAY EVENING

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|--|
| A1  | 6.39787 | 6.87523 | RELAXATION |
| A4  | 3.96052 | 3.50309 | LOCATION |
| A6  | 4.29455 | 3.69616 | AMOUNT OF ACTIVITY |
| A7  | 4.65152 | 4.29577 | AMOUNT OF TIME TAKEN |
| A8  | 5.03740 | 5.47604 | AMOUNT OF ROUTINE |
| A11 | 5.50426 | 5.48537 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|--|
| 1 | A1 | | 1 | 0.0357 | 10.148 | 0.0016 | RELAXATION |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A4  | 0.0042 | 1.158 | 0.2829 | 0.5306 | LOCATION |
| A6  | 0.0017 | 0.468 | 0.4944 | 0.7186 | AMOUNT OF ACTIVITY |
| A7  | 0.0056 | 1.526 | 0.2178 | 0.7448 | AMOUNT OF TIME TAKEN |
| A8  | 0.0031 | 0.858 | 0.3552 | 0.5343 | AMOUNT OF ROUTINE |
| A11 | 0.0006 | 0.166 | 0.6842 | 0.9754 | AMOUNT OF FUN |

### TABLE VI-21--continued

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS SUNDAY EVENING

DEPENDENT VARIABLE: PREFERENCE

#### CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|--------------|-----------|---|
| A1  | 6.43276 | 6.72629 | RELAXATION |
| A4  | 3.90337 | 3.77793 | LOCATION |
| A6  | 4.21615 | 4.07600 | AMOUNT OF ACTIVITY |
| A7  | 4.60056 | 4.54578 | AMOUNT OF TIME TAKEN |
| A8  | 5.09151 | 5.21635 | AMOUNT OF ROUTINE |
| A11 | 5.43861 | 5.84934 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**2}$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------|-----------|--------|---|
| 1 | A11 | | 1 | 0.0144 | 3.999 | 0.0465 | AMOUNT OF FUN |
| 2 | A1  | | 2 | 0.0178 | 4.946 | 0.0270 | RELAXATION |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**2}$ | F | PROB > F | TOLERANCE | LABEL |
|----------|--------|-------|----------|-----------|-------|
| A4 | 0.0001 | 0.020 | 0.8865 | 0.4636 | LOCATION |
| A6 | 0.0008 | 0.217 | 0.6416 | 0.7100 | AMOUNT OF ACTIVITY |
| A7 | 0.0001 | 0.024 | 0.8783 | 0.7118 | AMOUNT OF TIME TAKEN |
| A8 | 0.0001 | 0.017 | 0.8974 | 0.4700 | AMOUNT OF ROUTINE |

TABLE VI-22

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS RAINING AND ITS MUGGY OUTDOORS

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|--|
| A1  | 6.39977 | 6.94933 | RELAXATION |
| A4  | 3.91086 | 3.72277 | LOCATION |
| A6  | 4.37062 | 3.12647 | AMOUNT OF ACTIVITY |
| A7  | 4.68200 | 4.04668 | AMOUNT OF TIME TAKEN |
| A8  | 5.08864 | 5.24338 | AMOUNT OF ROUTINE |
| A11 | 5.58443 | 4.99475 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**}2$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|----------|-------------|----------|--|
| 1 | A7 | | 1 | 0.0701 | 20.662 | 0.0001 | AMOUNT OF TIME |
| 2 | A6 | | 2 | 0.0507 | 14.571 | 0.0002 | AMOUNT OF ACTIVITY |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**}2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|-------------------|------|----------|-----------|-------|
| A1  | 0.0015 | 0.417 | 0.5189 | 0.5461 | RELAXATION |
| A4  | 0.0018 | 0.490 | 0.4845 | 0.8074 | LOCATION |
| A8  | 0.0028 | 0.773 | 0.3802 | 0.8093 | AMOUNT OF ROUTINE |
| A11 | 0.0082 | 2.251 | 0.1347 | 0.9099 | AMOUNT OF FUN |

<u>TABLE VI-22 -- continued</u>

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION: IT IS RAINING AND ITS MUGGY OUTDOORS

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 6.38190 | 6.93119 | RELAXATION |
| A4 | 3.98727 | 3.39507 | LOCATION (INDOORS/OUTDOORS) |
| A6 | 4.32420 | 3.58028 | AMOUNT OF ACTIVITY |
| A7 | 4.57401 | 4.67874 | AMOUNT OF TIME TAKEN |
| A8 | 5.00957 | 5.58993 | AMOUNT OF ROUTINE |
| A11 | 5.51200 | 5.44937 | AMOUNT OF FUN |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A4 | | 1 | 0.0537 | 15.542 | 0.0001 | LOCATION |
| 2 | A8 | | 2 | 0.0269 | 7.555 | 0.0064 | ROUTINENESS |
| 3 | A7 | | 3 | 0.0143 | 3.948 | 0.0479 | AMOUNT OF TIME |
| 4 | A1 | | 4 | 0.0343 | 9.622 | 0.0021 | RELAXATION |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A6 | 0.0002 | 0.042 | 0.8373 | 0.0006 | AMOUNT OF ACTIVITY |
| A11 | 0.0005 | 0.129 | 0.7199 | 0.0006 | AMOUNT OF FUN |

TABLE VI-23

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: STORES

SITUATION: YOU NEED SOMETHING QUICKLY AND HAVE TO GET IT

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A4 | 5.01759 | 3.79503 | TRAVELING DISTANCE |
| A5 | 5.29310 | 5.11740 | VARIETY OF GOODS |
| A6 | 5.12519 | 4.44157 | QUALITY OF SERVICE |
| A7 | 5.86491 | 6.94539 | CONVENIENCE OF HOURS |
| A10 | 5.17827 | 4.83067 | PRICE OF GOODS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A7 | | 1 | 0.2994 | 117.084 | 0.0001 | CONVENIENCE |
| 2 | A4 | | 2 | 0.0596 | 17.310 | 0.0001 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-----|----------|-----------|-------|
| A5 | 0.0011 | 0.287 | 0.5925 | 0.8536 | VARIETY OF GOODS |
| A6 | 0.0010 | 0.280 | 0.5971 | 0.7182 | QUALITY OF SERVICE |
| A10 | 0.0019 | 0.505 | 0.4781 | 0.8483 | PRICE OF GOODS |

TABLE VI-23--continued

PRODUCT CLASS: STORES

SITUATION: YOU NEED SOMETHING QUICKLY AND HAVE TO GET IT.

DEPENDENT VARIABLE: PREFERENCE

#### CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|--|
| A4 | 4.99616 | 3.91788 | TRAVELING DISTANCE |
| A5 | 5.35141 | 5.15495 | VARIETY OF GOODS |
| A6 | 5.08973 | 4.51926 | QUALITY OF SERVICE |
| A7 | 5.88501 | 6.68144 | CONVENIENCE OF HOURS |
| A10 | 5.12306 | 4.91994 | PRICE OF GOODS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|--|
| 1 | A7 | | 1 | 0.1982 | 63.288 | 0.0001 | CONVENIENCE |
| 2 | A4 | | 2 | 0.0749 | 20.641 | 0.0001 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A5 | 0.0010 | 0.244 | 0.6217 | 0.8523 | VARIETY OF GOODS |
| A6 | 0.0001 | 0.034 | 0.8540 | 0.7376 | QUALITY OF SERVICE |
| A10 | 0.0030 | 0.762 | 0.3835 | 0.8581 | PRICE OF GOODS |

## TABLE VI-24

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: STORES

SITUATION: YOU NEED THINGS SUCH AS FIXTURES FOR THE HOUSE.

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A2 | 5.39757 | 5.82988 | AVAILABILITY OF PARKING |
| A4 | 4.72881 | 5.40393 | TRAVELING DISTANCE |
| A5 | 5.09061 | 6.24558 | VARIETY OF GOODS |
| A6 | 5.01238 | 5.07007 | QUALITY OF SERVICE |
| A8 | 5.85059 | 5.72941 | CONVENIENCE OF LOCATION |
| A10 | 5.20320 | 4.69175 | PRICE OF GOODS |

### STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A5 | | 1 | 0.1874 | 63.172 | 0.0001 | VARIETY |
| 2 | A4 | | 2 | 0.0266 | 7.473 | 0.0067 | DISTANCE |
| 3 | A6 | | 3 | 0.0147 | 4.056 | 0.0450 | SERVICE |

### VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-----|----------|-----------|-------|
| A2 | 0.0067 | 1.837 | 0.1764 | 0.6746 | AVAILABILITY OF PARKING |
| A8 | 0.0007 | 0.179 | 0.6722 | 0.5855 | CONVENIENCE OF LOCATION |
| A10 | 0.0016 | 0.434 | 0.5106 | 0.2670 | PRICE OF GOODS |

TABLE VI-24--continued

PRODUCT CLASS: STORES

SITUATION: YOU NEED THINGS SUCH AS FIXTURES FOR THE HOUSE.

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A2 | 5.37894 | 5.70483 | AVAILABILITY OF PARKING |
| A4 | 4.61993 | 5.33678 | TRAVELING DISTANCE |
| A5 | 5.20505 | 5.82117 | VARIETY OF GOODS |
| A6 | 4.99446 | 4.77981 | QUALITY OF SERVICE |
| A8 | 5.85913 | 5.39536 | CONVENIENCE OF LOCATION |
| A10 | 5.19616 | 4.31765 | PRICE OF GOODS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | VARIABLE REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|----|--------|-----------|--------|---|
| 1 | A10 | | 1 | 0.0994 | 27.150 | 0.0001 | PRICE |
| 2 | A4 | | 2 | 0.0960 | 26.022 | 0.0001 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A2 | 0.0015 | 0.373 | 0.5421 | 0.7886 | AVAILABILITY OF PARKING |
| A5 | 0.0123 | 3.033 | 0.0828 | 0.8608 | VARIETY OF GOODS |
| A6 | 0.0024 | 0.586 | 0.4447 | 0.3667 | QUALITY OF SERVICE |
| A8 | 0.0029 | 0.703 | 0.4025 | 0.6853 | CONVENIENCE OF LOCATION |

TABLE VI-25

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: STORES

SITUATION: YOU ARE SHOPPING FOR A GIFT FOR A SPECIAL OCCASION.

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 5.33799 | 6.09530 | QUALITY OF PRODUCTS |
| A2 | 5.42617 | 5.72803 | AVAILABILITY OF PARKING |
| A3 | 3.82233 | 3.64962 | WAITING TIME |
| A4 | 4.73197 | 5.54033 | TRAVELING DISTANCE |
| A5 | 5.14873 | 6.10367 | VARIETY OF GOODS |
| A8 | 5.73188 | 6.54584 | CONVENIENCE OF LOCATION |

STEPWISE SELECTION: SUMMARY

| | VARIABLE | | NUMBER | PARTIAL | F | PROB > | |
|------|---------|---------|--------|---------|-----------|--------|---|
| STEP | ENTERED | REMOVED | IN | R**2 | STATISTIC | F | |
| 1 | A5 | | 1 | 0.1072 | 32.910 | 0.0001 | VARIETY |
| 2 | A3 | | 2 | 0.1149 | 35.446 | 0.0001 | WAITING TIME |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A1 | 0.0004 | 0.107 | 0.7436 | 0.3538 | QUALITY OF PRODUCTS |
| A2 | 0.0036 | 0.984 | 0.3220 | 0.5729 | AVAILABILITY OF PARKING |
| A4 | 0.0022 | 0.586 | 0.4446 | 0.5176 | TRAVELING DISTANCE |
| A8 | 0.0102 | 2.790 | 0.0960 | 0.4119 | CONVENIENCE OF LOCATION |

TABLE VI-25--continued

PRODUCT CLASS: STORES

SITUATION: YOU ARE SHOPPING FOR A GIFT FOR A SPECIAL OCCASION.

DEPENDENT VARIABLE: PREFERENCE

### CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|--|
| A1 | 5.11879 | 6.62433 | QUALITY OF PRODUCTS |
| A2 | 5.43867 | 5.51827 | AVAILABILITY OF PARKING |
| A3 | 3.98880 | 3.24334 | WAITING TIME |
| A4 | 4.62082 | 5.48510 | TRAVELING DISTANCE |
| A5 | 5.30383 | 5.48291 | VARIETY OF GOODS |
| A8 | 5.59617 | 6.71603 | CONVENIENCE OF LOCATION |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | VARIABLE REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|--|
| 1 | A1 | | 1 | 0.2290 | 75.427 | 0.0001 | QUALITY |
| 2 | A4 | | 2 | 0.0366 | 9.618 | 0.0021 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A2 | 0.0075 | 1.893 | 0.1701 | 0.7749 | AVAILABILITY OF PARKING |
| A3 | 0.0104 | 2.655 | 0.1045 | 0.6774 | WAITING TIME |
| A5 | 0.0020 | 0.505 | 0.4781 | 0.8774 | VARIETY OF GOODS |
| A8 | 0.0091 | 2.308 | 0.1300 | 0.6209 | CONVENIENCE OF LOCATION |

## TABLE VI-26

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: STORES

SITUATION: YOU HAVE SOME TIME TO SPEND AND DECIDE TO GO SHOPPING

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|---|---|---|---|
| A1 | 5.31286 | 6.62028 | QUALITY OF PRODUCTS |
| A2 | 5.43475 | 5.75060 | AVAILABILITY OF PARKING |
| A4 | 4.76937 | 5.45586 | TRAVELING DISTANCE |
| A5 | 5.18655 | 6.06775 | VARIETY OF GOODS |
| A7 | 6.05269 | 5.79476 | CONVENIENCE OF HOURS |
| A8 | 5.72707 | 6.88717 | CONVENIENCE OF LOCATION |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A1 | | 1 | 0.0899 | 27.079 | 0.0001 | QUALITY |
| 2 | A5 | | 2 | 0.0799 | 23.704 | 0.0001 | VARIETY |
| 3 | A8 | | 3 | 0.0346 | 9.747 | 0.0020 | CONVENIENCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A2 | 0.0027 | 0.727 | 0.3945 | 0.6543 | AVAILABILITY OF PARKING |
| A4 | 0.0002 | 0.053 | 0.8182 | 0.6373 | TRAVELING DISTANCE |
| A7 | 0.0054 | 1.476 | 0.2254 | 0.6378 | CONVENIENCE OF HOURS |

TABLE VI-26--continued

PRODUCT CLASS: STORES

SITUATION: YOU HAVE SOME TIME TO SPEND AND DECIDE TO GO SHOPPING

DEPENDENT VARIABLE: PREFERENCE

## CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 5.13660 | 6.30307 | QUALITY OF PRODUCTS |
| A2 | 5.42812 | 5.55379 | AVAILABILITY OF PARKING |
| A4 | 4.64822 | 5.27619 | TRAVELING DISTANCE |
| A5 | 5.27474 | 5.52296 | VARIETY OF GOODS |
| A7 | 6.12061 | 5.77311 | CONVENIENCE OF HOURS |
| A8 | 5.61014 | 6.48939 | CONVENIENCE OF LOCATION |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL $R^{**}2$ | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------|-----------|--------|---|
| 1 | A1 | | 1 | 0.1374 | 40.442 | 0.0001 | QUALITY |
| 2 | A4 | | 2 | 0.0160 | 4.126 | 0.0433 | DISTANCE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL $R^{**}2$ | F | PROB > F | TOLERANCE | LABEL |
|----------|---------|---|----------|-----------|-------|
| A2 | 0.0005 | 0.123 | 0.7263 | 0.7864 | AVAILABILITY OF PARKING |
| A5 | 0.0051 | 1.294 | 0.2564 | 0.8814 | VARIETY OF GOODS |
| A7 | 0.0010 | 0.263 | 0.6088 | 0.8113 | CONVENIENCE OF HOURS |
| A8 | 0.0074 | 1.882 | 0.1713 | 0.6523 | CONVENIENCE OF LOCATION |

## TABLE VI-27

### STEPWISE DISCRIMINANT ANALYSIS
### ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE FEELING HUNGRY ON A WEEKDAY AFTER SCHOOL

DEPENDENT VARIABLE: RETRIEVAL

#### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|---|---|---|---|
| A1 | 4.28706 | 4.86935 | FRESHNESS |
| A3 | 5.83374 | 5.91087 | CALORIE CONTENT |
| A4 | 3.99542 | 4.27505 | SALTINESS |
| A5 | 5.72040 | 5.79271 | TASTE |
| A6 | 4.11165 | 3.67424 | PRICE |
| A10 | 4.19715 | 3.58632 | NUTRITIONAL VALUE |
| A11 | 4.67847 | 4.12500 | ABILITY TO FILL |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A1 | | 1 | 0.0444 | 13.287 | 0.0003 | FRESHNESS |
| 2 | A6 | | 2 | 0.0379 | 11.212 | 0.0009 | PRICE |
| 3 | A5 | | 3 | 0.0311 | 9.127 | 0.0027 | TASTE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A3 | 0.0003 | 0.084 | 0.7718 | 0.6470 | CALORIE CONTENT |
| A4 | 0.0025 | 0.705 | 0.4019 | 0.6795 | SALTINESS |
| A10 | 0.0002 | 0.050 | 0.8228 | 0.5339 | NUTRITIONAL VALUE |
| A11 | 0.0010 | 0.274 | 0.6014 | 0.5287 | ABILITY TO FILL |

TABLE VI-27--continued

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE FEELING HUNGRY ON A WEEKDAY AFTER SCHOOL

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|---|---|---|---|
| A1 | 4.35406 | 4.42416 | FRESHNESS |
| A3 | 5.93081 | 5.49447 | CALORIE CONTENT |
| A4 | 4.01684 | 4.10486 | SALTINESS |
| A5 | 5.66592 | 5.99196 | TASTE |
| A6 | 3.99516 | 4.27675 | PRICE |
| A10 | 4.00213 | 4.55884 | NUTRITIONAL VALUE |
| A11 | 4.55416 | 4.79385 | ABILITY TO FILL |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A5 | | 1 | 0.0293 | 8.625 | 0.0036 | TASTE |
| 2 | A3 | | 2 | 0.0511 | 15.333 | 0.0001 | CALORIE CONTENT |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A1 | 0.0027 | 0.770 | 0.3811 | 0.8588 | FRESHNESS |
| A4 | 0.0018 | 0.524 | 0.4696 | 0.8494 | SALTINESS |
| A6 | 0.0022 | 0.640 | 0.4243 | 0.6622 | PRICE |
| A10 | 0.0006 | 0.169 | 0.6809 | 0.6610 | NUTRITIONAL VALUE |
| A11 | 0.0009 | 0.266 | 0.6062 | 0.7381 | ABILITY TO FILL |

## TABLE VI-28

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE WATCHING T.V. AND YOU NEED A SNACK

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|---|---|---|---|
| A1 | 4.28436 | 4.79648 | FRESHNESS |
| A3 | 5.83183 | 5.90915 | CALORIE CONTENT |
| A4 | 3.86606 | 4.89674 | SALTINESS |
| A5 | 5.72300 | 5.76862 | TASTE |
| A6 | 4.09338 | 3.83306 | PRICE |
| A10 | 4.19467 | 3.69002 | NUTRITIONAL VALUE |
| A11 | 4.68633 | 4.16713 | ABILITY TO FILL |

### STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A1 | | 1 | 0.0392 | 11.672 | 0.0007 | FRESHNESS |
| 2 | A4 | | 2 | 0.0334 | 9.860 | 0.0019 | SALTINESS |
| 3 | A6 | | 3 | 0.0154 | 4.453 | 0.0357 | PRICE |
| 4 | A5 | | 4 | 0.0211 | 6.102 | 0.0141 | TASTE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A3 | 0.0003 | 0.089 | 0.7663 | 0.6391 | CALORIE CONTENT |
| A10 | 0.0002 | 0.069 | 0.7924 | 0.5327 | NUTRITIONAL VALUE |
| A11 | 0.0013 | 0.371 | 0.5429 | 0.5213 | ABILITY TO FILL |

TABLE VI-28--continued

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE WATCHING T.V. AND YOU NEED A SNACK

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.34491 | 4.46123 | FRESHNESS |
| A3 | 5.85010 | 5.82157 | CALORIE CONTENT |
| A4 | 4.04727 | 3.98154 | SALTINESS |
| A5 | 5.65870 | 6.02120 | TASTE |
| A6 | 4.02085 | 4.17265 | PRICE |
| A10 | 4.15964 | 3.92054 | NUTRITIONAL VALUE |
| A11 | 4.59491 | 4.62870 | ABILITY TO FILL |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A5 | | 1 | 0.0362 | 10.739 | 0.0012 | TASTE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A1 | 0.0029 | 0.833 | 0.3622 | 0.9994 | FRESHNESS |
| A3 | 0.0076 | 2.190 | 0.1400 | 0.8635 | CALORIE CONTENT |
| A4 | 0.0002 | 0.053 | 0.8175 | 0.9813 | SALTINESS |
| A6 | 0.0025 | 0.716 | 0.3981 | 0.7161 | PRICE |
| A10 | 0.0065 | 1.864 | 0.1732 | 0.9918 | NUTRITIONAL VALUE |
| A11 | 0.0062 | 1.778 | 0.1835 | 0.8161 | ABILITY TO FILL |

TABLE VI-29

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE PLANNING AN INTIMATE GET-TOGETHER WITH SOME FRIENDS

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 4.25515 | 5.15741 | FRESHNESS |
| A3 | 5.83250 | 5.92809 | CALORIE CONTENT |
| A4 | 3.75890 | 5.96181 | SALTINESS |
| A5 | 5.75245 | 5.57639 | TASTE |
| A8 | 3.12838 | 2.67477 | NOVELTY |
| A11 | 4.71184 | 3.82991 | ABILITY TO FILL |
| A12 | 5.96828 | 6.30461 | POPULARITY |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A4 | | 1 | 0.1246 | 40.691 | 0.0001 | SALTINESS |
| 2 | A1 | | 2 | 0.1048 | 33.347 | 0.0001 | FRESHNESS |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A3 | 0.0008 | 0.222 | 0.6380 | 0.9939 | CALORIE CONTENT |
| A5 | 0.0007 | 0.186 | 0.6663 | 0.9808 | TASTE |
| A8 | 0.0000 | 0.001 | 0.9788 | 0.9135 | NOVELTY |
| A11 | 0.0045 | 1.289 | 0.2571 | 0.7342 | ABILITY TO FILL |
| A12 | 0.0000 | 0.002 | 0.9611 | 0.9415 | POPULARITY |

TABLE VI-29--continued

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE PLANNING AN INTIMATE GET-TOGETHER FOR SOME FRIENDS

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.32439 | 4.54062 | FRESHNESS |
| A3 | 5.76871 | 6.14481 | CALORIE CONTENT |
| A4 | 3.94616 | 4.38364 | SALTINESS |
| A5 | 5.68426 | 5.91360 | TASTE |
| A8 | 2.98468 | 3.41665 | NOVELTY |
| A11 | 4.61860 | 4.53418 | ABILITY TO FILL |
| A12 | 6.02213 | 5.96352 | POPULARITY |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A8 | | 1 | 0.0236 | 6.914 | 0.0090 | NOVELTY |
| 2 | A5 | | 2 | 0.0403 | 11.970 | 0.0006 | PRICE |
| 3 | A4 | | 3 | 0.0293 | 8.583 | 0.0037 | SALTINESS |
| 4 | A1 | | 4 | 0.0303 | 8.838 | 0.0032 | FRESHNESS |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A3 | 0.0074 | 2.097 | 0.1487 | 0.6958 | CALORIE CONTENT |
| A11 | 0.0005 | 0.135 | 0.7140 | 0.5712 | ABILITY TO FILL |
| A12 | 0.0007 | 0.192 | 0.6615 | 0.1683 | POPULARITY |

## TABLE VI-30

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE PLANNING TO TAKE A LONG ROAD TRIP BY CAR

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 4.25927 | 5.04167 | FRESHNESS |
| A2 | 4.22075 | 3.62813 | MESSYNESS |
| A3 | 5.85607 | 5.77242 | CALORIE CONTENT |
| A4 | 3.90717 | 4.82219 | SALTINESS |
| A5 | 5.74779 | 5.62292 | TASTE |
| A6 | 4.13548 | 3.52645 | PRICE |
| A9 | 5.62841 | 6.48850 | CONVENIENCE OF PACKAGE |
| A11 | 4.69602 | 4.01617 | ABILITY TO FILL |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|------------------|---------|-----------|--------------|-------------|----------|---|
| 1 | A1 | | 1 | 0.0802 | 24.922 | 0.0001 | FRESHNESS |
| 2 | A6 | | 2 | 0.0752 | 23.164 | 0.0001 | PRICE |
| 3 | A4 | | 3 | 0.0189 | 5.467 | 0.0201 | SALTINESS |
| 4 | A5 | | 4 | 0.0193 | 5.561 | 0.0190 | TASTE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A2 | 0.0005 | 0.155 | 0.6943 | 0.4529 | MESSYNESS |
| A3 | 0.0000 | 0.000 | 0.9954 | 0.6391 | CALORIE CONTENT |
| A9 | 0.0001 | 0.035 | 0.8514 | 0.3970 | CONVENIENCE OF PACKAGE |
| A11 | 0.0024 | 0.676 | 0.4117 | 0.5213 | ABILITY TO FILL |

TABLE VI-30--continued

PRODUCT CLASS: SNACK FOODS

SITUATION: YOU ARE PLANNING A LONG ROAD TRIP BY CAR

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.26305 | 4.89236 | FRESHNESS |
| A2 | 4.26248 | 3.51823 | MESSYNESS |
| A3 | 5.87490 | 5.69222 | CALORIE CONTENT |
| A4 | 4.07446 | 3.83326 | SALTINESS |
| A5 | 5.71907 | 5.78733 | TASTE |
| A6 | 4.09143 | 3.84824 | PRICE |
| A9 | 5.61582 | 6.40810 | CONVENIENCE OF PACKAGE |
| A11 | 4.65550 | 4.33209 | ABILITY TO FILL |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A9 | | 1 | 0.0687 | 21.086 | 0.0001 | CONVENIENCE |
| 2 | A1 | | 2 | 0.0173 | 5.012 | 0.0259 | FRESHNESS |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-----|----------|-----------|-------|
| A2 | 0.0109 | 3.121 | 0.0784 | 0.4871 | MESSYNESS |
| A3 | 0.0040 | 1.145 | 0.2856 | 0.7198 | CALORIE CONTENT |
| A4 | 0.0003 | 0.075 | 0.7844 | 0.6890 | SALTINESS |
| A5 | 0.0047 | 1.353 | 0.2457 | 0.7057 | TASTE |
| A6 | 0.0030 | 0.864 | 0.3535 | 0.4682 | PRICE |
| A11 | 0.0061 | 1.743 | 0.1878 | 0.6464 | ABILITY TO FILL |

<u>TABLE VI-31</u>

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: GIFT ITEMS

SITUATION: IT IS A CLOSE FRIEND'S BIRTHDAY

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|---|---|---|---|
| A1 | 4.42714 | 5.60586 | UTILITY |
| A2 | 3.77552 | 3.59122 | CUTENESS |
| A5 | 4.43499 | 4.65991 | PERSONAL NATURE |
| A6 | 3.48695 | 3.46455 | NOVELTY |
| A9 | 4.46339 | 5.40051 | QUALITY IMAGE |

<u>STEPWISE SELECTION: SUMMARY</u>

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|---|---|---|---|---|---|---|---|
| 1 | A1 | | 1 | 0.0795 | 19.529 | 0.0001 | UTILITY |
| 2 | A5 | | 2 | 0.0435 | 10.226 | 0.0016 | PERSONAL NATURE |
| 3 | A6 | | 3 | 0.0200 | 4.567 | 0.0337 | NOVELTY |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|---|---|---|---|---|---|
| A2 | 0.0063 | 1.421 | 0.2344 | 0.4236 | CUTENESS |
| A9 | 0.0042 | 0.950 | 0.3309 | 0.2528 | QUALITY IMAGE |

TABLE VI-31--continued

PRODUCT CLASS: GIFT ITEMS

SITUATION: IT IS A CLOSE FRIEND'S BIRTHDAY

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.70741 | 4.28472 | UTILITY |
| A2 | 3.67569 | 4.00781 | CUTENESS |
| A5 | 4.22616 | 5.39149 | PERSONAL NATURE |
| A6 | 3.36706 | 3.91927 | NOVELTY |
| A9 | 4.48893 | 5.08998 | QUALITY IMAGE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A5 | | 1 | 0.1004 | 25.212 | 0.0001 | PERSONAL NATURE |

VARTIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A1 | 0.0011 | 0.240 | 0.6250 | 0.8058 | UTILITY |
| A2 | 0.0101 | 2.298 | 0.1309 | 0.7230 | CUTENESS |
| A6 | 0.0093 | 2.115 | 0.1472 | 0.7893 | NOVELTY |
| A9 | 0.0066 | 1.502 | 0.2216 | 0.8850 | QUALITY IMAGE |

TABLE VI-32

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: GIFT ITEMS

SITUATION : YOU WANT TO CHEER UP A FRIEND WHO IS NOT WELL.

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A2 | 3.48930 | 4.78796 | CUTENESS |
| A5 | 4.25979 | 5.33241 | PERSONAL NATURE |
| A6 | 3.57446 | 3.11264 | NOVELTY |
| A8 | 4.89316 | 3.54899 | PRICE |
| A10 | 4.38782 | 4.39630 | CHEERFULNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A8 | | 1 | 0.1197 | 30.720 | 0.0001 | PRICE |
| 2 | A5 | | 2 | 0.1095 | 27.670 | 0.0001 | PERSONAL NATURE |
| 3 | A6 | | 3 | 0.0338 | 7.844 | 0.0055 | NOVELTY |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A2 | 0.0009 | 0.192 | 0.6618 | 0.4489 | CUTENESS |
| A10 | 0.0154 | 3.495 | 0.0629 | 0.2174 | CHEERFULNESS |

TABLE VI-32--continued

PRODUCT CLASS: GIFT ITEMS

SITUATION: YOU WANT TO CHEER UP A FRIEND WHO IS NOT WELL

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A2 | 3.60570 | 4.23121 | CUTENESS |
| A5 | 4.29520 | 5.08333 | PERSONAL NATURE |
| A6 | 3.46675 | 3.54081 | NOVELTY |
| A8 | 4.79581 | 4.04497 | PRICE |
| A10 | 4.26214 | 4.83149 | CHEERFULNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | VARIABLE REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A5 | | 1 | 0.0480 | 11.386 | 0.0009 | PERSONAL NATURE |
| 2 | A8 | | 2 | 0.0502 | 11.903 | 0.0007 | PRICE |
| 3 | A10 | | 3 | 0.0344 | 7.981 | 0.0052 | CHEERFULNESS |
| 4 | | A5 | 2 | 0.0064 | 1.434 | 0.2324 | PERSONAL NATURE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|---|----------|-----------|-------|
| A2 | 0.0020 | 0.455 | 0.5007 | 0.6701 | CUTENESS |
| A5 | 0.0064 | 1.434 | 0.2324 | 0.5180 | PERSONAL NATURE |
| A6 | 0.0084 | 1.897 | 0.1698 | 0.2174 | NOVELTY |

## TABLE VI-33

### STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: GIFT ITEMS

SITUATION: A FRIEND IS LEAVING TOWN AND GOING AWAY

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|--|
| A1 | 4.56729 | 4.98363 | UTILITY |
| A2 | 3.68708 | 4.16369 | CUTENESS |
| A5 | 4.40687 | 4.93304 | PERSONAL NATURE |
| A6 | 3.50351 | 3.33903 | NOVELTY |
| A9 | 4.57476 | 4.90619 | QUALITY IMAGE |

### STEPWISE SELECTION: SUMMARY

NO VARIABLES MET ENTRY CRITERION

| VARIABLE | R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|------|---|----------|-----------|-------|
| A1 | 0.0079 | 1.791 | 0.1821 | 1.0000 | UTILITY |
| A2 | 0.0098 | 2.234 | 0.1364 | 1.0000 | CUTENESS |
| A5 | 0.0133 | 3.037 | 0.0827 | 1.0000 | PERSONAL NATURE |
| A6 | 0.0030 | 0.670 | 0.4139 | 1.0000 | NOVELTY |
| A9 | 0.0064 | 1.454 | 0.2292 | 1.0000 | QUALITY IMAGE |

NO VARIABLES CAN BE ENTERED

TABLE VI-33--continued

PRODUCT CLASS: GIFT ITEMS

SITUATION: A FRIEND IS LEAVING TOWN AND GOING AWAY

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 4.71547 | 4.24468 | UTILITY |
| A2 | 3.81238 | 3.48848 | CUTENESS |
| A5 | 4.26059 | 5.28369 | PERSONAL NATURE |
| A6 | 3.31476 | 4.13244 | NOVELTY |
| A9 | 4.43466 | 5.31175 | QUALITY IMAGE |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | VARIABLE REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|--------|--------|-----------|--------|---|
| 1 | A6 | | 1 | 0.1110 | 28.216 | 0.0001 | NOVELTY |
| 2 | A5 | | 2 | 0.0216 | 4.963 | 0.0269 | PERSONAL NATURE |
| 3 | A2 | | 3 | 0.0372 | 8.652 | 0.0036 | CUTENESS |
| 4 | | A6 | 2 | 0.0169 | 3.847 | 0.0511 | NOVELTY |
| 5 | A1 | | 3 | 0.0370 | 8.616 | 0.0037 | UTILITY |
| 6 | A9 | | 4 | 0.0218 | 4.977 | 0.0267 | QUALITY |
| 7 | | A5 | 3 | 0.0114 | 2.563 | 0.1108 | PERSONAL NATURE |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|---|----------|-----------|-------|
| A5 | 0.0114 | 2.563 | 0.1108 | 0.2476 | PERSONAL NATURE |
| A6 | 0.0085 | 1.909 | 0.1684 | 0.3879 | NOVELTY |

## TABLE VI-34

### STEPWISE DISCRIMINANT ANALYSIS
### ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: IT IS LUNCH TIME AND YOU NEED A DRINK WITH LUNCH.

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1  | 2.33567 | 1.81301 | TEMPERATURE (COLD/HOT) |
| A3  | 4.64819 | 4.91365 | ABILITY TO FILL |
| A6  | 4.55732 | 4.97039 | THIRST QUENCHING |
| A11 | 4.97822 | 5.43060 | SWEETNESS |
| A12 | 3.72286 | 3.66677 | HEALTHFULNESS |
| A14 | 5.53333 | 6.00299 | COMPATIBILITY WITH FOOD |

STEPWISE SELESTION: SUMMARY

| | VARIABLE | | NUMBER | PARTIAL | F | PROB > | |
|------|---------|---------|--------|---------|-----------|--------|---|
| STEP | ENTERED | REMOVED | IN | R**2 | STATISTIC | F | |
| 1 | A14 | | 1 | 0.0264 | 9.165 | 0.0027 | COMPATIBILITY WITH FOOD |
| 2 | A3 | | 2 | 0.0177 | 6.068 | 0.0143 | ABILITY TO FILL |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A1  | 0.0007 | 0.245 | 0.6211 | 0.6240 | TEMPERATURE (COLD/HOT) |
| A6  | 0.0100 | 3.392 | 0.0664 | 0.6758 | THIRST QUENCHING |
| A11 | 0.0035 | 1.177 | 0.2787 | 0.8707 | SWEETNESS |
| A12 | 0.0006 | 0.193 | 0.6604 | 0.9446 | HEALTHFULNESS |

TABLE VI-34--continued

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: IT IS LUNCH TIME AND YOU NEED A DRINK WITH LUNCH

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 2.46533 | 1.82763 | TEMPERATURE (COLD/HOT) |
| A3 | 4.68973 | 4.50594 | ABILITY TO FILL |
| A6 | 4.44801 | 4.98144 | THIRST QUENCHING |
| A11 | 4.98033 | 4.99554 | SWEETNESS |
| A12 | 3.69601 | 3.79828 | HEALTHFULNESS |
| A14 | 5.41256 | 6.01016 | COMPATIBILITY WITH FOOD |

STEPWISE SELECTION; SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A14 | | 1 | 0.0520 | 15.700 | 0.0001 | COMPATIBILTY |

WITH FOOD

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|---|----------|-----------|-------|
| A1 | 0.0006 | 0.175 | 0.6763 | 0.6375 | TEMPERATURE (COLD/HOT) |
| A3 | 0.0064 | 1.836 | 0.1764 | 0.9942 | ABILITY TO FILL |
| A6 | 0.0038 | 1.090 | 0.2974 | 0.7981 | THIRST QUENCHING |
| A11 | 0.0010 | 0.277 | 0.5993 | 0.9770 | SWEETNESS |
| A12 | 0.0061 | 1.739 | 0.1883 | 0.9498 | HEALTHFULNESS |

TABLE VI-35

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE HAVING BREAKFAST AND YOU NEED SOMETHING TO DRINK

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1  | 2.33248 | 2.40916 | TEMPERATURE (COLD/HOT) |
| A2  | 4.24611 | 3.29709 | STIMULATING |
| A3  | 4.65144 | 4.82475 | ABILITY TO FILL |
| A11 | 4.98350 | 4.13648 | SWEETNESS |
| A12 | 3.71732 | 5.90531 | HEALTHFULNESS |

STEPWISE SELECTION; SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|-------------|-------------|----------|---|
| 1 | A12 | | 1 | 0.1358 | 51.394 | 0.0001 | HEALTFULNESS |
| 2 | A2  | | 2 | 0.0399 | 13.548 | 0.0003 | STIMULATING |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|-------------|-------|----------|-----------|-------|
| A1  | 0.0001 | 0.027 | 0.8703 | 0.2793 | TEMPERATURE (COLD/HOT) |
| A3  | 0.0000 | 0.005 | 0.9465 | 0.3123 | ABILITY TO FILL |
| A11 | 0.0009 | 0.283 | 0.5950 | 0.2833 | SWEETNESS |

<u>TABLE VI-35--continued</u>

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE HAVING BREAKFAST AND YOU NEED SOMETHING TO DRINK.

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1 | 2.18609 | 2.92574 | TEMPERATURE (COLD/HOT) |
| A2 | 4.42146 | 3.53548 | STIMULATING |
| A3 | 4.59324 | 4.88732 | ABILITY TO FILL |
| A11 | 5.11891 | 4.43474 | SWEETNESS |
| A12 | 3.34322 | 5.23338 | HEALTHFULNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A12 | | 1 | 0.1711 | 59.018 | 0.0001 | HEALTHFULNESS |
| 2 | A1 | | 2 | 0.0574 | 17.360 | 0.0001 | TEMPERATURE |
| 3 | A3 | | 3 | 0.0183 | 5.300 | 0.0220 | FILLING |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A2 | 0.0121 | 3.452 | 0.0642 | 0.2991 | STIMULATING |
| A11 | 0.0008 | 0.229 | 0.6326 | 0.5314 | SWEETNESS |

TABLE VI-36

STEPWISE DISCRIMINANT ANALYSIS
ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE STUDYING LATE AT NIGHT AND YOU NEED A DRINK.

DEPENDENT VARIABLE: RETRIEVAL

CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1 | 2.32533 | 2.36650 | TEMPERATURE (COLD/HOT) |
| A2 | 4.16435 | 4.63525 | STIMULATING |
| A3 | 4.65144 | 4.65145 | ABILITY TO FILL |
| A6 | 4.53272 | 4.68490 | THIRST QUENCHING |
| A11 | 4.99109 | 4.94739 | SWEETNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A2 | | 1 | 0.0135 | 3.914 | 0.0489 | STIMULATING |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|-------|----------|-----------|-------|
| A1 | 0.0006 | 0.170 | 0.6807 | 0.9209 | TEMPERATURE (COLD/HOT) |
| A3 | 0.0000 | 0.006 | 0.9366 | 0.9984 | ABILITY TO FILL |
| A6 | 0.0095 | 2.723 | 0.1000 | 0.8373 | THIRST QUENCHING |
| A11 | 0.0018 | 0.526 | 0.4690 | 0.9380 | SWEETNESS |

TABLE VI-36--continued

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE STUDYING LATE AT NIGHT AND YOU NEED A DRINK.

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1  | 2.32094 | 2.40400 | TEMPERATURE (COLD/HOT) |
| A2  | 4.18308 | 4.63688 | STIMULATING |
| A3  | 4.65591 | 4.62371 | ABILITY TO FILL |
| A6  | 4.59637 | 4.32836 | THIRST QUENCHING |
| A11 | 5.03237 | 4.68055 | SWEETNESS |

STEPWISE SELECTION: SUMMARY

NO VARIABLES MET THE ENTRY CRITERION.

| VARIABLE | R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|------|---|----------|-----------|-------|
| A1  | 0.0003 | 0.086 | 0.7691 | 1.0000 | TEMPERATURE (COLD/HOT) |
| A2  | 0.0105 | 3.021 | 0.0833 | 1.0000 | STIMULATING |
| A3  | 0.0002 | 0.057 | 0.8107 | 1.0000 | ABILITY TO FILL |
| A6  | 0.0045 | 1.283 | 0.2583 | 1.0000 | THIRST QUENCHING |
| A11 | 0.0082 | 2.375 | 0.1244 | 1.0000 | SWEETNESS |

NO VARIABLES CAN BE ENTERED

## TABLE VI-37

### STEPWISE DISCRIMINANT ANALYSIS
### ATTRIBUTES THAT UNDERLIE RETRIEVAL AND PREFERENCE

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE PLANNING A "WILD" PARTY FOR SOME FRIENDS

DEPENDENT VARIABLE: RETRIEVAL

### CLASS MEANS

| VARIABLE | NOT RETRIEVED | RETRIEVED | |
|----------|---------------|-----------|---|
| A1  | 2.42081 | 1.69396 | TEMPERATURE (COLD/HOT) |
| A3  | 4.64269 | 4.71466 | ABILITY TO FILL |
| A4  | 5.41102 | 6.23452 | POPULARITY |
| A9  | 4.40854 | 5.75862 | MIXABILITY WITH ALCOHOL |
| A11 | 4.93095 | 5.36339 | SWEETNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A9 | | 1 | 0.0745 | 23.009 | 0.0001 | MIXABILITY WITH ALCOHOL |
| 2 | A4 | | 2 | 0.0297 | 8.712 | 0.0034 | POPULARITY |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A1  | 0.0001 | 0.022 | 0.8831 | 0.7265 | TEMPERATURE (COLD/HOT) |
| A3  | 0.0002 | 0.044 | 0.8333 | 0.8022 | ABILITY TO FILL |
| A11 | 0.0006 | 0.173 | 0.6777 | 0.7845 | SWEETNESS |

TABLE VI-37--continued

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION: YOU ARE PLANNING A "WILD" PARTY FOR SOME FRIENDS

DEPENDENT VARIABLE: PREFERENCE

CLASS MEANS

| VARIABLE | NOT PREFERRED | PREFERRED | |
|----------|---------------|-----------|---|
| A1  | 2.48429 | 1.64348 | TEMPERATURE (COLD/HOT) |
| A3  | 4.62931 | 4.75190 | ABILITY TO FILL |
| A4  | 5.38754 | 6.07187 | POPULARITY |
| A9  | 4.29499 | 5.83258 | MIXABILITY WITH ALCOHOL |
| A11 | 4.84067 | 5.63176 | SWEETNESS |

STEPWISE SELECTION: SUMMARY

| STEP | VARIABLE ENTERED | REMOVED | NUMBER IN | PARTIAL R**2 | F STATISTIC | PROB > F | |
|------|---------|---------|-----------|--------------|-------------|----------|---|
| 1 | A9  | | 1 | 0.1338 | 44.196 | 0.0001 | MIXABILITY WITH ALCOHOL |
| 2 | A11 | | 2 | 0.0323 | 9.525 | 0.0022 | SWEETNESS |

VARIABLES NOT ENTERED:

| VARIABLE | PARTIAL R**2 | F | PROB > F | TOLERANCE | LABEL |
|----------|--------------|------|----------|-----------|-------|
| A1 | 0.0000 | 0.008 | 0.9280 | 0.7487 | TEMPERATURE (COLD/HOT) |
| A3 | 0.0004 | 0.122 | 0.7267 | 0.8647 | ABILITY TO FILL |
| A4 | 0.0079 | 2.252 | 0.1345 | 0.7845 | POPULARITY |

sets of products that are recalled (preferred) and those that are not. The inference that these attributes caused the products to be recalled (preferred) cannot be made in this instance.

Second, correlations between the predictor variables may cause stepwise discriminant analysis to be arbitrary in the selection of variables for inclusion in the model. Further, while the analysis identifies attributes that discriminate within a specific task it does not indicate whether the discriminant weights for each attribute are significantly different across tasks.

Finally, an additional factor that complicates identification of the attributes that are actually used by subjects to retrieve or evaluate brands is the fact that, in real life, a number of these attributes are highly correlated. For instance, restaurants that are close to the workplace are often cheap and serve fast foods. Stores that are close to residential areas are often supermarkets or convenience stores, while shopping malls are typically located further away.

Thus, the results from this part of Experiment One were treated as exploratory in nature. Using real stimuli, the analysis suggests certain attributes that may be cuing/important attributes but it is not conclusive and cannot indicate whether these attributes are actually used by the subject to retrieve or select products from a larger set.

In order to pursue this question further it was necessary to construct artificial stimuli where correlations between attributes could be controlled. For the next experiment artificial stimuli were constructed in the product class of restaurants. The results of the

analysis in the product class of restaurants is thus discussed in some detail below.

Four usage-situations, thirty-seven brands and ten attributes served as stimuli in the product class of restaurants. The results of the stepwise discriminant analysis are presented separately for the memory-based and the stimulus-based tasks and for each usage-situation in Tables VI-15 to VI-18. The dependent variable in the memory-based task is retrieval, while in the stimulus-based task the dependent variable is preference.

For the first situation, subjects made a memory-based or a stimulus-based choice of the restaurants that they would go to for "lunch from school." The attribute of "distance" from school is the only variable that discriminates between restaurants that were retrieved and those that were not in this situation. An examination of the means indicates that the brands that are retrieved are significantly closer (2.99 on an 8 point scale) than those that are not (4.16). The summary table indicates that once "distance" entered the model, no other attributes were able to discriminate between the two groups.

When subjects were asked to indicate their stimulus-based preferences however, the attributes of "formality of atmosphere" and "price" are the two attributes that best discriminate between restaurants that were preferred and those that were not. Subjects preferred restaurants that are less formal (1.72 vs 3.54) and restaurants that are cheaper (3.04 vs 4.21). Further, the attribute of "distance" is very close to significant (p < .059) in discriminating between the two groups. Keeping in mind the problems of multicollinearity and of inferring

causality from such data, the following tentative conclusions may be drawn from this result. It appears that the attribute of "distance" is a "cuing attribute" in that it is activated by the usage-situation of "lunch from school" and is then instrumental in discriminating between restaurants that are retrieved/not retrieved in this situation. On the other hand, when subjects are provided with the list of restaurants and asked to indicate their preferences, other attributes gain "importance." The evaluative attributes of "formality" and "price" emerge more significant than "distance" in discriminating between restaurants that are preferred/not preferred. While distance of the restaurant from school is the only attribute that seems to cue retrieval in this instance, other attributes are also used by the subjects in making a choice from a given consideration set.

In the situation "you are at home and feeling too lazy to fix something for dinner," the attribute of "distance" from home again appears to be the cuing-attribute. Restaurants that are retrieved are significantly closer (3.16) than those that are not (4.11). On the other hand, the attribute of "quality of service," dicriminates best between restaurants that are preferred/not preferred. Restaurants that are preferred are higher in service quality (5.68) than those that are not (5.31). Results in the third situation (it is late at night and you have finished eating dinner) are very similar to the second. In addition, the attributes of "price" and "formality of atmosphere" are very close to significant in discriminating between restaurants that are preferred/not preferred in this situation. However, an examination of subjects' answers in this situation suggests that they did not really understand

the situation and responded to it just as they might to the second one. The intention of the third situation was to suggest "dessert or after-dinner" places, but apparently this was not clear to the subjects.

In the fourth situation subjects had to retrieve/rate preferences for the situation "it is a special occasion and you want to celebrate it." The attributes of "formality of atmosphere," "distance" and "quality of service," best discriminate between restaurants that are retrieved/not retrieved. Restaurants that were retrieved were more formal (5.62 vs 2.99) and had better quality of service (5.94 vs 5.32). Interestingly in this situation, while distance served to cue restaurants, it was restaurants that were further away (4.48 vs 3.94) that were retrieved. It appears that when thinking of restaurants to go to for a special occasion, subjects also wish to go to a place that is out of the ordinary and possibly out of the (usual) way. In the stimulus-based task, the attributes "formality of atmosphere" and "quality of atmosphere" best discriminated between brands preferred/not preferred. Subjects preferred restaurants that were more formal (5.69 vs 2.55) and had better ambience (6.00 vs 3.95).

A summary of the cuing and important attributes for each of the other product classes/usage-situations is given in Table VI-38. Results in other product classes are also quite striking and serve to underscore the differences between memory-based and stimulus-based tasks. For instance in the case of snack foods, "saltiness" appears to be a cuing attribute in some situations (e.g., watching t.v, taking a road trip). Salty snacks seem to "come to mind" more readily for these situations. However salty snacks are not preferred when subjects are asked to make a

TABLE VI-38

SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS

PRODUCT CLASS: RESTAURANTS

SITUATION

| | Lunch | Dinner | After Dinner | Celebration |
|---|---|---|---|---|
| CUING ATTRIBUTES | Distance [a](-) | Distance (-) | Distance (-) | Formality (+)<br>Service (+)<br>Distance (+) |
| IMPORTANT ATTRIBUTES | Formality (-)<br>Price (-)<br>[b]Distance (-) | Service (+) | Service (+) | Formality (+)<br>Ambience (+)<br>[b]Distance (+) |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

PRODUCT CLASS: LEISURE-TIME ACTIVITIES

SITUATION

| | Friday Night | Long Break | Sunday eve. | Raining |
|---|---|---|---|---|
| CUING ATTRIBUTES | Fun (+)<br>Time (-)<br>[b]Planning (+) | Fun (+)<br>Time (+)<br>Sociable (+) | Relaxation (+) | Time (-)<br>Activity (-) |
| IMPORTANT ATTRIBUTES | Fun (+)<br>[b]Relaxation(+) | Fun (+)<br>Time (+) | Fun (+)<br>Relaxation (+) | Location (-)<br>Routine (+)<br>Time (+)<br>Relaxation(+) |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

TABLE VI-38--continued

PRODUCT CLASS: STORES

SITUATION

|  | Need Quickly | Things for home | Gift | Leisure |
|---|---|---|---|---|
| CUING ATTRIBUTES | Convenience(+) Distance (-) | Variety (+) Distance (+) Service (+) | Variety (+) Waiting (-) [b]Convenience(+) | Quality (+) Variety (+) Convenience(+) |
| IMPORTANT ATTRIBUTES | Convenience(+) Distance (-) | Price (-) Distance (+) | Quality (+) Distance (+) | Quality (+) Distance (+) |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

PRODUCT CLASS: SNACK FOODS

SITUATION

|  | Weekday | Watching T.V. | Get together | Road trip |
|---|---|---|---|---|
| CUING ATTRIBUTES | Freshness (+) Price (-) Taste (+) | Taste (+) Freshness (+) Saltiness (+) Price (-) | Saltiness (+) Freshness (+) | Freshness (+) Price (-) Saltiness (+) Taste (-) |
| IMPORTANT ATTRIBUTES | Taste (+) Calories (-) | Taste (+) | Freshness (+) Saltiness (+) Taste (+) Novelty (+) | Convenience(+) Freshness (+) [b]Messyness |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

TABLE VI-38--continued

PRODUCT CLASS: GIFT ITEMS

SITUATION

|  | Birthday | Not well | Leaving town |
|---|---|---|---|
| CUING ATTRIBUTES | Utility (+) Personal (+) Novelty (-) | Personal (+) Price (-) Novelty (-) [b]Cheerful (+) | - |
| IMPORTANT ATTRIBUTES | Personal (+) | Price (-) Cheerful (+) | Utility (-) Cuteness (-) Quality (+) |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

PRODUCT CLASS: NON-ALCOHOLIC BEVERAGES

SITUATION

|  | Lunch | Breakfast | Late night | Party |
|---|---|---|---|---|
| CUING ATTRIBUTES | Compatible with food (+) Filling (+) | Healthy (+) Stimulating(-) | Stimulating(+) Thirst quenching (+) | Mixable with alcohol (+) Popularity(+) |
| IMPORTANT ATTRIBUTES | Compatible with food (+) | Healthy (+) Temperature(+) Filling (+) | - | Mixable with alcohol (+) Sweetness (+) |

[a] (-) or (+) signify less or more of the attribute, respectively.

[b] marginally significant p <.10

stimulus-based choice. Similarly, "utility" of a gift appears to be a cuing attribute in specific situations (birthday), but is not valued as much during stimulus-based choice.

The problem of identifying the actual cuing or important attributes also becomes clear when other product classes are examined. For instance, the attribute of "novelty" discriminates between "gift-items" that are retrieved/not retrieved in the situation "you want to cheer up a friend who is not well" (Table VI-32). The gifts that are retrieved are less novel than those that are not. It is unlikely that, in this situation, the attribute of novelty actually acted to cue gifts that were less novel. However, novel gifts are less likely to be brought to mind, especially for such common situations.

The analysis as a whole supports Prediction 3 and suggests that cuing attributes may indeed be different from the attributes considered important for choice. It highlights the importance of examining the process of brand retrieval separately from the process of brand choice, especially in situations where choice is likely to be memory-based.

As discussed above, it is necessary to use artificial stimuli and a controlled experiment to better measure the extent to which cuing attributes are instrumental in retrieving brands during memory-based choice. For the next experiment fictitious brands were created in the product class of restaurants, for the usage-situations of "lunch" and "special occasion." Accordingly, based on the results of Experiment One, the attributes of "distance" (for lunch) and "formality of atmosphere" (for special occasion) were chosen as the cuing attributes to be used in Experiment Two.

CHAPTER VII

EXPERIMENT TWO

## Description of Experiment

The purpose of this study is to measure more specifically, the influence of usage-situations on brand retrieval and choice. Experiment One indicates that brand choice probabilities could vary significantly depending upon whether the consumer is given a set of brands to choose from or whether he has to rely on memory to make a choice. Further, the experiment suggests that usage-situations could have direct effects on retrieval, quite apart from their acknowledged effects on choice.

Briefly, the usage-situation is hypothesized to affect retrieval by cuing certain attributes or rendering them more accessible. These attributes, labeled "cuing attributes" could then serve to activate brands in memory, causing the consumer to retrieve these brands and include them in a consideration set for that situation. For reasons discussed earlier, such cuing attributes may be a subset of, or even different from "important attributes" used by the consumer to evaluate brands during choice. Thus, while possession of cuing attributes is believed to increase brand accessibility, possession of important attributes increases preference for brands. Brands that have a high value on an important attribute are more likely to be evaluated favorably and thus chosen in a specific situation. However, when evaluation is preceded by retrieval, brands that do not measure up on the cuing attribute may not be retrieved and may not even be considered for choice.

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This combined influence of cuing and important attributes is illustrated more clearly in Table VII-1. Table VII-1 classifies brands (A, B, C) in a product class in terms of the dimensions of accessibility and preference within a particular choice situation. For the sake of interpretability it is assumed that there are only three brands in the product class, although the same analysis will extend to the case where there are many brands in the product class. Brands could be high or low in accessibility, that is, they could have high or low values on cuing attributes for the situation. Similarly, they could vary in preference, depending on their possession of attributes important for choice. The dimensions of accessibility and preference are often correlated in the real world, that is, brands that are preferred are often more accessible (Nedungadi & Hutchinson 1985). It is however important to consider a situation such as that shown in Table VII-1 so as to the examine the effects of these dimensions separately. Such a classification of brands facilitates comparison between the memory-based case (where brand retrieval plays an important role), and the stimulus-based case (where no brand retrieval need occur).

When choice is stimulus-based, consumers are presented with all three brands and asked to make a choice. In this condition, the probability of choice of brand C will be highest, followed by brand B, and then brand A. When choice is memory-based, consumers are required to retrieve brands from memory, and then choose from amongst them. In this condition, brand A has the highest probability of being retrieved, followed by brand B and then brand C. If we assume that a particular consumer retrieves brands A and B in this instance, when the consumer

TABLE VII-1

BRAND ACCESSIBILITY VS BRAND PREFERENCE

BRANDS

|  | A | B | C |
|---|---|---|---|
| ACCESSIBILITY (Value on Cuing Attribute) | High | Medium | Low |
| PREFERENCE (Value on Important Attributes) | Low | Medium | High |

chooses between the brands retrieved, brand B will be chosen over brand A. Thus, in this example, when choice is stimulus-based brand C possesses the highest probability of choice, while when choice is memory-based, brand B is most likely to be chosen.

This example assumes another distinction, discussed earlier, between stimulus-based and memory-based choice processes. In the memory-based case, the consumer's choice process is separated into two stages. In the first stage, the consumer uses the cuing attribute(s) to retrieve a set of brands. However, once these brands have been retrieved, the cuing attributes are less likely to discriminate among the brands retrieved. Thus, while the cuing attribute may lead to the retrieval of brands A and B, other important attributes may guide selection of brand B over brand A. A consumer "going to lunch" may use the cuing attribute of "distance" to retrieve a set of restaurants that are close by. Having done so, the attribute of "distance" is less likely to be determinant for the purposes of brand choice; that is, all retrieved restaurants are likely to be close by. Thus, when the consumer chooses from amongst these retrieved restaurants, she is less likely to use the attribute of distance, and will probably use other evaluatively important attributes when making her choice.

Based on the above discussion the following general predictions were made:

1.  Cuing attributes facilitate retrieval and brands with high values on cuing attributes will have a higher probability of being retrieved in a particular situation. Consequently, such brands will experience a higher probability of choice when

brand choice is memory-based compared to the case when brand choice is stimulus-based.

2.   Once a consumer has retrieved a consideration set for choice, the cuing attributes are less likely to discriminate among the brands in this set.   In other words, the unstandardized regression weight of a cuing attribute in predicting choice from the consideration set is less than its weight in predicting stimulus-based choice.

Experiment Two was designed to test these predictions. As discussed earlier, when using real stimuli in Experiment One, high correlations among attributes made it difficult to isolate the exact role of the cuing attribute.   This experiment made use of artificial stimuli where attribute correlations were controlled such that the effect of the cuing attribute could be predicted and measured.

In brief, the procedure consisted of giving subjects attribute information on a set of (fictitious) restaurants and then asking them to retrieve and/or choose restaurants for a particular usage-situation. Probabilities of retrieval and choice were then compared between subjects who made the choice from memory and those who had the stimulus information present when making their choice.

Subjects

One-hundred-and-twenty-eight students in the introductory marketing course at the University of Florida, Gainesville took part in this experiment.   Subjects were given credit which, in part, fulfilled certain course requirements.   Since Experiments One and Two were run in different semesters there were no subjects common to both these experiments.

Stimulus construction

The product class of restaurants was used for this study. This
product class was chosen because it is relatively easy to create
"fictitious" restaurants and to provide subjects with realistic
descriptions of them. Further, as discussed in Experiment One, the
attributes of "distance" and "formality/atmosphere" appeared to cue
restaurants in the usage-situations of "going to lunch from school" and
"celebrating a special occasion" respectively. Accordingly, eight
restaurant descriptions were constructed--three for usage-situation 1,
three for usage-situation 2 and two as additional fillers to make the
memory task reasonably difficult. Pretests indicated that given just six
restaurants, subjects found the memory task too simple. They could
easily recall all restaurants, by rote, and then make their choice from
among them. Thus the entire knowledge set in this instance could be
brought to mind. The model developed in Chapter III suggests that in
many instances, consumers will only retrieve a fraction of their
knowledge sets and it is the dynamics of such (selective) retrieval that
is of interest in this study. When given ten restaurants, subjects
tended to get confused and could remember very little in the time
allotted (about ten minutes). Eight restaurants appeared to be an
optimal number in terms of making the memory task reasonable, at the same
time ensuring that all restaurants were not easily accessible to
subjects.

Thus, the basic fact that subjects would fail to retrieve and
consider some brands, was directly manipulated in the study. As a
result, while subjects were likely to consider fewer brands than in the

stimulus-based case, the findings of interest center around whether the brands considered were different from (not less than) those considered in the stimulus-based case.

Descriptions of restaurants in Columbus, Ohio were obtained from a Columbus City Guide and were modified in line with the desired stimulus characteristics. Subjects were asked to imagine that they were going to school at Ohio State University in Columbus. They were given descriptions of the restaurants in the form of a travel brochure. Fictitious (single syllable) names were given to each restaurant. The names were pretested for familiarity and ease of recall and eight names that were roughly equal in retrievability were chosen. To ensure that these names did not confound the manipulation of accessibility, they were counterbalanced across restaurant descriptions.

Table VII-2, a simple extension of Table VII-1, presents the basis for stimulus construction. Two usage-situations were used for this experiment. Usage-situation 1 was the same as that used in Experiment One, i.e., "going to lunch from school." Usage-situation 2 was a slightly modified version of that used in Experiment One. So as to make the situation more "formal" and to ensure that "formality of atmosphere" was a cuing attribute, subjects were asked to imagine that they were "going to dinner with their boyfriend's/girlfriends parents." Each restaurant was described on the four attributes of "distance from school," "quality of food," "quality of service" and "quality of atmosphere." In addition the restaurants relevant to situation 2 were described in terms of their "degree of formality." The attribute of "distance from school" is the cuing attribute for usage-situation 1

TABLE VII-2

ATTRIBUTE STRUCTURE USED TO CONSTRUCT STIMULI

RESTAURANTS

| ATTRIBUTES | FOR SITUATION 1 | | | FOR SITUATION 2 | | | FOR FILLERS | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H |
| Distance[a1] | 1[c] | 2 | 3 | 6 | 7 | 8 | 4 | 5 |
| Quality of[b] Food | 6 | 5 | 4 | 1 | 2 | 3 | 7 | 8 |
| Quality of[b] Service | 6 | 5 | 4 | 1 | 2 | 3 | 8 | 7 |
| Quality of[b] Atmosphere | 6 | 5 | 4 | 1 | 2 | 3 | 7 | 8 |
| Formality[a2] | 6 | 5 | 4 | 3 | 2 | 1 | 8 | 7 |

[a1] : Cuing attribute for situation 1.

[a2] : Cuing attribute for situation 2.

[b] : Important attributes

[c] : Ranks are used here to describe the stimulus structure. Thus restaurant A has the highest value on the attribute of "distance", that is it is closest, and so on. These attribute values were converted into verbal descriptions for the purposes of the experiment.

while the attribute of "formality" is the cuing attribute for usage-situation 2.

Stimuli were constructed such that restaurants' values on a cuing attribute were negatively correlated with values on other attributes. Thus, among the set of three restaurants designed for the situation of "lunch from school," the restaurant with the highest value on the cuing attribute of "distance," that is the closest restaurant, did not have the highest value on any other attributes (see Table VII-2).

To make the task realistic subjects were not provided with numerical attribute scores, but were given full descriptions of the restaurants on each of the chosen attributes. These descriptions were pretested to ensure that subjects perceptions of restaurants' values on each attribute were rank ordered as intended. Table VII-3 lists the actual descriptions given to subjects, in accordance with the structure presented in Table VII-2.

Procedure

Upon arrival, subjects were randomly assigned to a specific condition (described below) and were given the instructions for the study (Appendix II-1). These instructions explained that the experimenter was interested in examining how consumers, specifically those moving to a new city, acquired and learned new information about consumer products. They were asked to concentrate fully on the information they would be given. Subjects were asked to imagine that they were going to school at the Ohio State University in Columbus, Ohio. They were provided with an "informational brochure called City Guide put together by the Columbus Area Chamber of Commerce" that described eight restaurants in the city.

TABLE VII-3

ACTUAL DESCRIPTIONS GIVEN TO SUBJECTS

RESTAURANT NAMES:

| | |
|---|---|
| TED'S | DAN'S |
| MAX'S | PAT'S |
| AMY'S | ROB'S |
| SUE'S | BILL'S |

RESTAURANT DESCRIPTIONS:

A[a].  Intersection of Thirteenth Ave. and N. High St.  The quality of food at A's is just average but quite dependable.  The service is quite adequate although A's does have it's busy days.  A's has a spacious, airy and well lit dining area where the setting is practical, yet casual.  A's is the closest restaurant to the University campus - just two (2) minutes away.

B.  11th Ave. at Worthington St.  Although no particular item can be singled out as extra special, the quality of food at B's is certainly above average.  Service at B's is adequate, and is likely to be faster if you order the items of the day.  Wooden tables and benches are arranged around the dining area to create an informal and pleasant setting.  B's is five (5) minutes away from the University campus.

C.  Lane Ave. at Park Plaza.  The food is usually prepared with care and on some days the restaurant features some interesting "local" specialties. The service at C's is normally quite prompt.  The restaurant has a spacious interior and lots of greenery creates a cool and casual setting. C's is eight (8) minutes away from campus.

D.  The Village at Leonard Ave.  D's has excellent quality food at all times and for the discriminating person, some of D's "specialties" on the menu are indeed exquisite.  The service is very prompt and courteous. Polished wooden flooring and original brass fixtures make for an aesthetic and formal setting.  D's is situated fifteen (15) minutes away from the University.

[a] The letter names for each restaurant correspond to the structure described in Table VII-2.  The names listed above were substituted, and counterbalanced across descriptions, as described.

TABLE VII-3 -- continued

E.   Chamber's Circle, Chambers Rd.  The restaurant consistently maintains high quality in food and on his good days the chef turns out some delights.  The service at E's is pleasant and courteous.  Following a Victorian theme, the decor and furnishings in the restaurant are all done in black and white, creating an atmosphere that is pleasing and formal. E's is eighteen (18) minutes away from the University.

F.   5721 Duncan St.  The restaurant has good quality food and a few specialties are quite tasty.  The service is prompt though you may have a short wait on busy days.  F's is tastefully decorated and a handcarved mahogany bar graces one end of the floor.  The atmosphere is formal and a coat and tie would be quite appropriate.  F's is twenty (20) minutes away from campus.

G.   3305 Eigth Ave. The quality of food is acceptable, especially if you stick to the daily fare. We found the service at G's somewhat sloppy and the order sometimes took as long as half an hour.  The restaurant is clean and orderly but nothing special.  G's is eight (8) minutes away from campus.

H.   Intersection of Cannon Drive and 12th Ave.  The food at H's is not of high quality and tends to be greasy on occasion.  Although they try hard to be prompt in service, the kitchen is rather slow.  The atmosphere is bright and a little loud, especially when the restaurant is busy.  H's is ten (10) minutes away from the University.

They were informed that the restaurants had been given fictitious names so as to maintain their anonymity.

Subjects were first given five minutes to study the descriptions with a view to getting as familiar with the information as possible. Descriptions for each restaurant, in random order, were provided on separate pages. Subjects paced themselves through the brochure.

Once they had finished this task, subjects were given two more minutes to think about the information they had read. For this purpose they were asked to imagine that they were describing these restaurants to a friend who had not heard of them. To assist them in this task, the last page of the brochure contained a map of the University area in Columbus, with the eight restaurants clearly marked out. At the end of this two-minute period, subjects were given another minute to quickly go back and compare their memory for the information with the actual stimulus information provided (Appendix II-1 contains an example of the complete task).

Subjects were now asked to keep the brochure aside and were required to perform one of the following four tasks:

Memory-based choice task (Neither restaurant names nor descriptions provided). Subjects were given a specific usage-situation (either usage-situation 1 or usage-situation 2). They were then asked to indicate their first and second choice of restaurants for this situation (see Appendix II-2).

Stimulus-based choice task (Both restaurant names and descriptions provided). Subjects were given a specific usage-situation (either usage-situation 1 or usage-situation 2). They were then given the names of all

the restaurants and asked to indicate their preference of restaurant for the specific situation. However, unlike in the memory-based task, they were informed that they could refer to the information they had previously studied.

Names of restaurants were presented in pairs and for each pair, subjects were asked to circle the one restaurant they preferred. Such a method of presentantion forced subjects to deliberate on the qualities of each restaurant and compare it to others. This was done to ensure that subjects did not simply use memory to make a choice (see Appendix II-3).

Retrieval and choice task (Neither restaurant names nor descriptions available). This task was designed as a test of prediction 2. Subjects were provided with a specific situation (either situation 1 or situation 2) and asked to retrieve and list all the restaurants that they would consider going to for this situation. Once they had done this they were required to rank the restaurants listed in order of preference for that situation (see Appendix II-4).

The underlying model of choice presented in Chapter III suggests that the memory-based choice task consists of a two-stage process. In the first stage subjects bring a set of brands to mind, while in the second stage they make a choice from among the retrieved brands. The cuing attribute is believed to be instrumental at the retrieval stage when subjects bring a consideration set into working memory. Consequently, brands in the subject's consideration set should be more homogeneous on the cuing attribute than brands in the knowledge set. It is thus possible that once a cuing attribute has been used to retrieve a set of brands, it may no longer be useful in discriminating and thus

choosing among these brands. To test this prediction it was necessary to separate the retrieval and evaluation stages of memory-based choice. While subjects in this condition made a memory-based choice (similar to those in condition 1), they were asked to perform the two stages separately. That is, they were first asked to retrieve a consideration set of brands and then asked to make a final choice from among this set.

Cued recall task (Restaurant names provided but descriptions unavailable). Task 4 was designed to test whether the increased probability of choice (of the brand with high cuing value) was in fact a result of a failure to retrieve other competing brands. For this purpose subjects were given the names of all restaurants (thus ensuring that there was no retrieval failure of restaurant names). They were given a specific usage-situation (either situation 1 or situation 2) and then asked to rank these restaurants in order of preference for that situation (Appendix II-5). Subjects were not allowed to go back and look at the information in this instance, and were required to use their memory in order to rank the brands.

This task contained elements of both the memory-based and stimulus-based choice tasks. The predictions made earlier assume the existence of a two-stage process. First, possession of a cuing attribute is hypothesized to enhance the accessibility of brands that have high value on this attribute, and thus increase the probability that they will be retrieved and considered. Second, such an increased probability of retrieval would lead to an increased probability of choice for this brand if other brands, superior to it on other attributes, were not retrieved and included in the same consideration set. Thus, it is failure to

retrieve other brands (that are low on the cuing attribute), that is hypothesized to lead to an increase in the brand's choice probability. This suggests that if the names of all brands are given to subjects, thus compensating for such retrieval failure, the effect of the cuing attribute on choice should be similar to the stimulus-based case.

Thus, three between-subjects factors were manipulated in this experiment:

a) Name order (8 levels): Each name was assigned to one of the eight restaurants in turn.

b) Task (4 levels): Each subject did one of the four tasks detailed above.

c) Usage-Situations (2 levels): Each subject completed the task for only one of the two usage-situations described.

Further, a within-subjects Brand factor consisted of the three brands appropriate to each usage-situation.

On entering the room, subjects were randomly assigned to one of the 64 cells of the design. Two subjects completed the experiment for each cell.

<u>Results and Discussion</u>

The basic proposition tested in this experiment has to do with the difference in brand choice probabilities between stimulus-based and memory-based tasks. The value of certain restaurants on specific attributes was varied, and consequently it was predicted that, due to the mediating effect of accessibilty, restaurants with high values on cuing attributes would benefit when the consumer resorts to memory to make a brand choice.

All subsequent analyses focus on the three restaurants relevant to each usage-situation. Thus, for the usage-situation of "going to lunch from school" the analyses compare retrieval/choice probabilities of restaurants A, B, and C (see Table VII-2). Similarly, for the usage-situation of "taking your boyfriend's/girlfriend's parents out to dinner" restaurants D, E, and F are examined.

## Stimulus-based vs memory-based choice

Prediction 1 posits that brand choice probabilities should vary between the memory-based and stimulus-based tasks. A test of this prediction entails a test for a significant Task(memory-based vs stimulus-based)*Brand interaction. In the memory-based task, subjects indicated their first and second choice of restaurant for the specific situation. Of the sixteen subjects completing the memory-based task for situation 1, fifteen (93%) chose restaurants A, B, or C as their first or second choice. Eleven (69%) made both their first and second choices from this set. A subject's first choice was assigned a rank of 1 and his second choice a rank of 2. To facilitate comparison within this set, any restaurant (of the set A, B, C) that was not the subject's first or second choice was assigned a rank of 3.

Of the sixteen subjects that did the memory-based task for situation 2, all sixteen chose one of restaurants D, E, or F as their first or second choice. Thirteen (81%) made both their first and second choice from restaurants D, E, and F. Subjects choices were ranked as explained above.

In the stimulus-based task subjects were presented with pairs of restaurants and asked to indicate the restaurant they would choose within

each pair. Each subject's responses were summed to obtain a rank order of choice for each of the relevant restaurants.

To test the prediction of interest, an Analysis of Variance was run, separately for each situation, with rank-order of choice as the dependent variable and stimulus list, type of task and brands (restaurants) as independent variables. Brands were treated as a within-subjects factor for the analysis. Results of this analysis are presented in Table VII-4 and VII-5 for situation 1 and 2 respectively. The tables also contain the mean choice ranks for each restaurant in the stimulus-based and memory-based tasks.

In Table VII-4 for situation 1, the only significant effect is the interaction of Brand*Task ($F_{2,32} = 7.46$; p<.002). Similarly for situation 2 (Table VII-5), the interaction of Brand*Task is significant ($F_{2,32} = 5.61$; p<.008). As predicted, the rank order of choice of brands varies across the stimulus-based and memory-based tasks. An examination of the means and an analysis of simple effects indicates that the direction of brand choice is as predicted. In situation 1, brand A is the restaurant with the highest value on the cuing attribute of "distance from school." The probability of choice of this restaurant is significantly higher in the memory-based case than in the stimulus-based case ($F_{1,30} = 7.35$; p<.01). In the same situation, brand C is the restaurant that has the highest value on the important attributes, but a low value on the cuing attribute. The probability of choice of this restaurant is significantly higher in the stimulus-based case than in the memory-based case ($F_{1,30} = 17.00$; p<.0003).

TABLE VII-4

CHOICE RANK AS A FUNCTION OF
NAME (ORDER), BRAND AND CHOICE TASK
SITUATION: YOU ARE GOING TO LUNCH FROM SCHOOL

ANALYSIS OF VARIANCE

| SOURCE | DF | SUM OF SQUARES | F VALUE |
|---|---|---|---|
| ORDER | 7 | 0.66666667 | 0.35 |
| TASK | 1 | 1.50000000 | 5.54** |
| ORDER*TASK | 7 | 0.66666667 | 0.35 |
| SUBJ(ORDER*TASK) | 16 | 4.33333333 | 0.33 |
| BRAND | 2 | 2.43750000 | 1.46 |
| BRAND*TASK | 2 | 12.43750000 | 7.46* |
| BRAND*ORDER | 14 | 9.39583333 | 0.81 |
| BRAND*ORDER*TASK | 14 | 6.39583333 | 0.55 |

*p< .01; ** p< .05

| MEAN CHOICE RANK (OF 3) | | |
|---|---|---|
| CHOICE TASK | | |
| BRAND | MEMORY-BASED | STIMULUS-BASED |
| A | 2.00 | 2.68 |
| B | 2.25 | 1.88 |
| C | 2.50 | 1.44 |

TABLE VII-5

CHOICE RANK AS A FUNCTION OF
NAME (ORDER), BRAND AND CHOICE TASK
SITUATION: YOU ARE TAKING YOUR BOYFRIEND'S/GIRLFRIENDS PARENTS OUT TO DINNER

ANALYSIS OF VARIANCE

| SOURCE | DF | MEAN SQUARE | F VALUE |
|---|---|---|---|
| ORDER | 7 | 0.15625000 | 0.71 |
| TASK | 1 | 0.09375000 | 3.00 |
| ORDER*TASK | 7 | 0.15625000 | 0.71 |
| SUBJ(ORDER*TASK) | 16 | 0.50000000 | 0.04 |
| BRAND | 2 | 6.06250000 | 3.46** |
| BRAND*TASK | 2 | 9.81250000 | 5.61* |
| BRAND*ORDER | 14 | 8.93750000 | 0.73 |
| BRAND*ORDER*TASK | 14 | 13.18750000 | 1.08 |

$^*$p<.01   $^{**}$p<.05

MEAN CHOICE RANK (OF 3)

CHOICE TASK

| BRAND | MEMORY-BASED | STIMULUS-BASED |
|---|---|---|
| F | 2.00 | 2.75 |
| E | 2.00 | 1.87 |
| D | 2.19 | 1.37 |

In situation 2, brand F is the restaurant with the highest value on the cuing attribute of "formality." The probability of choice of this brand is significantly higher in the memory-based case than in the stimulus-based case ($F_{1,30} = 7.11$; $p<.01$). The reverse is true for brand D ($F_{1,30} = 8.71$; $p<.006$). The main effect of brand is also significant in situation 2. An examination of the means indicates that this result is due to brand D, which is greatly preferred in the stimulus-based case, and is about equally preferred in the memory-based case.

These results provide strong support for prediction 1. It appears that brands with high values on the cuing attribute for a particular situation are facilitated in terms of choice when the consumer resorts to memory for choice. On the other hand, brands with low values on the cuing attribute may suffer although they possess high values on other attributes considered important for choice.

Retrieval and choice task

As discussed, in this task subjects were required to separately perform the two stages of the hypothesized memory-based choice process. They were first asked to retrieve a set of brands and were then required to rank this "consideration set" in order of preference for choice. Two separate analyses were conducted on this data.

First since this task is memory-based, the overall results should be similar to those of the memory-based task. Second, prediction 2 suggests that the results of the second stage of this task should be similar to the results of the stimulus-based task. Since brands in the consideration set should be more homogeneous on the cuing attribute, this attribute should not be determinant in choosing from the set. Thus,

brands with high values on the cuing attribute should have no further advantage, once retrieval has occured.

Analyses of Variance were run on subjects' choice ranks in this condition and those in the memory-based and stimulus-based conditions, for each situation. First, ranks were computed within each relevant brand set. Then, similar to the memory-based condition, restaurants (within a specific situation) that were not the subject's first or second choice were assigned a rank of three. Tables VII-6 to VII-11 present the results of this analysis for each situation in turn.

At the outset it must be noted that subjects' choices were not as focused in this condition, as they were in the memory-based task. For situation 1, 88% of subjects made either their first or second choices from restaurants A, B or C (93% in the memory-based case) and 44% made both their choices from this set (69% in the memory-based case). In situation 2, 93% of subjects chose one of restaurants D, E, or F as their first or second choice (100% in the memory-based case) and 63% (81%) made both their first and second choice from this set. Subjects tended to retrieve and list a variety of restaurants and subsequently were not as focused when choosing among this set.

Table VII-6 presents the comparison between choice ranks in this condition and in the memory-based condition for situation 1. The interaction of Brand*Task is marginally significant ($F_{2,32} = 2.75$; p<.10), indicating that choice ranks in this condition are different from choice ranks in the memory-based condition. Table VII-7 compares choice ranks in this condition with those obtained in the stimulus-based task for situation 1. The interaction of Brand*Task is not significant. This

## TABLE VII-6

COMPARISON OF CHOICE RANKS IN
THE MEMORY-BASED AND RETRIEVE/CHOOSE CONDITIONS (SITUATION 1)

| SOURCE | DF | SUM OF SQUARES | F VALUE |
|--------|-----|----------------|---------|
| ORDER | 7 | 1.57291667 | 0.58 |
| TASK | 1 | 0.51041667 | 1.32 |
| ORDER*TASK | 7 | 1.07291667 | 0.40 |
| SUBJ(ORDER*TASK) | 16 | 6.16666667 | 0.47 |
| BRAND | 2 | 0.02083333 | 0.01 |
| BRAND*TASK | 2 | 4.52083333 | 2.75** |
| BRAND*ORDER | 14 | 15.64583333 | 1.36 |
| BRAND*ORDER*TASK | 14 | 10.14583333 | 0.88 |

## TABLE VII-7

COMPARISON OF CHOICE RANKS IN
THE STIMULUS-BASED AND RETRIEVE/CHOOSE CONDITIONS (SITUATION 1)

| SOURCE | DF | SUM OF SQUARES | F VALUE |
|--------|-----|----------------|---------|
| ORDER | 7 | 0.65625000 | 0.82 |
| TASK | 1 | 0.26041667 | 2.27 |
| ORDER*TASK | 7 | 0.65625000 | 0.82 |
| SUBJ(ORDER*TASK) | 16 | 1.83333333 | 0.17 |
| BRAND | 2 | 13.27083333 | 9.80* |
| BRAND*TASK | 2 | 2.14583333 | 1.58 |
| BRAND*ORDER | 14 | 10.56250000 | 1.11 |
| BRAND*ORDER*TASK | 14 | 15.68750000 | 1.65 |

* = $p < .01$; ** = $p < .10$

## TABLE VII-8

MEAN CHOICE RANKS (OF 3) FOR ALL THREE CONDITIONS (SITUATION 1)

| BRAND | MEMORY-BASED | TASK STIMULUS-BASED | RETRIEVE/CHOOSE |
|-------|--------------|----------------|-----------------|
| A | 2.00 | 2.68 | 2.38 |
| B | 2.25 | 1.88 | 2.12 |
| C | 2.50 | 1.44 | 1.81 |

indicates that for situation 1 results of the retrieve/choose task are not similar to the memory-based task. This is an unexpected result and will be discussed in greater detail below. Mean choice ranks for all three conditions are presented in Table VII-8.

Tables VII-9 to VII-11 present the results for situation 2. The interaction of Brand*Task is insignificant in the memory-based comparison and is significant in the stimulus-based comparison ($F_{2,32}$ = 4.57; p<.02). In this situation, results of the retrieve/choose task are very similar to the memory-based case. Choice of restaurant F is facilitated when the subject resorts to memory to make a choice while choice of restaurant D is inhibited.

The results of the retrieve/choose task are now used to test prediction 2. If prediction 2 is correct, the cuing attribute that served to retrieve a set of restaurants would not be used by subjects for the ranking task. Subjects' rank order of preference, within the consideration set, should then be similar to the ordering obtained for the stimulus-based choice task above.

To examine this proposition it was necessary to identify subjects who had included all three, or at least two of the three target restaurants in their consideration sets. For situation 1, thirteen of sixteen subjects included at least two of the three target restaurants (A, B, C) in their consideration set and for situation 2, fourteen of sixteen subjects included at least two of the target restaurants (D, E, F) in the set.

Tables VII-12 and VII-13 present the number of subjects who preferred a particular restaurant in each pair, for situations 1 and 2

TABLE VII-9

COMPARISON OF CHOICE RANKS IN
THE MEMORY-BASED AND RETRIEVE/CHOOSE CONDITIONS (SITUATION 2)

| SOURCE | DF | SUM OF SQUARES | F VALUE |
|---|---|---|---|
| ORDER | 7 | 0.15625000 | 0.43 |
| TASK | 1 | 0.01041667 | 0.20 |
| ORDER*TASK | 7 | 0.40625000 | 1.11 |
| SUBJ(ORDER*TASK) | 16 | 0.83333333 | 0.04 |
| BRAND | 2 | 1.27083333 | 0.53 |
| BRAND*TASK | 2 | 0.39583333 | 0.16 |
| BRAND*ORDER | 14 | 14.06250000 | 0.83 |
| BRAND*ORDER*TASK | 14 | 12.93750000 | 0.76 |

TABLE VII-10

COMPARISON OF CHOICE RANKS IN
THE STIMULUS-BASED AND RETRIEVE/CHOOSE CONDITIONS (SITUATION 2)

| SOURCE | DF | SUM OF SQUARES | F VALUE |
|---|---|---|---|
| ORDER | 7 | 0.12500000 | 0.86 |
| TASK | 1 | 0.04166667 | 2.00 |
| ORDER*TASK | 7 | 0.12500000 | 0.86 |
| SUBJ(ORDER*TASK) | 16 | 0.33333333 | 0.02 |
| BRAND | 2 | 4.02083333 | 2.10 |
| BRAND*TASK | 2 | 12.77083333 | 6.66* |
| BRAND*ORDER | 14 | 10.31250000 | 0.77 |
| BRAND*ORDER*TASK | 14 | 7.56250000 | 0.56 |

* = $p < .01$; ** = $p < .10$

TABLE VII-11

MEAN CHOICE RANKS (OF 3) FOR ALL THREE CONDITIONS (SITUATION 2)

| | | TASK | |
|---|---|---|---|
| BRAND | MEMORY-BASED | STIMULUS-BASED | RETRIEVE/CHOOSE |
| D | 2.18 | 1.37 | 2.19 |
| E | 2.00 | 1.87 | 2.12 |
| F | 2.00 | 2.75 | 1.81 |

respectively. In each row of the table, the column to the left indicates the number of subjects who preferred the restaurant that was higher on the cuing attribute, while the column to the right indicates the number of subjects who preferred the restaurant that was higher on the important attributes. These (left and right) columns were summed separately and an overall proportion computed (Tables VII-12 & VII-13) which indicates the number of subjects who preferred the restaurants higher on the cuing attributes to the restaurants higher on the important attributes. A similar proportion was also computed for the stimulus-based task. The proportions for these different tasks are also presented in Tables VII-12 and VII-13.

For usage-situation 1, the comparison between choice proportions in the retrieve/choose task and the stimulus-based task is insignificant ($x^2$ = 1.96; p>.10). This indicates that in situation 1, once the subject has retrieved a consideration set, the cuing attribute of "distance" may not be as useful in making a choice from this set. However, for situation 2, the reverse is true. There is a significant difference between choice proportions in the retrieve/choose and stimulus-based tasks for this situation ($x2$ = 15.49; p<.01) This is contrary to predictions and suggests that the cuing attribute of "formality" may still be utilized by subjects even after retrieval has taken place.

To summarize, in the retrieve and choose task, subjects made a memory-based choice. However, they were required to make this choice in two stages and it was hypothesized that the cuing attribute would be more influential at the first (evocation) stage rather than at the second (evaluation) stage.

## TABLE VII-12

PREFERENCES WITHIN CONSIDERATION SETS
SITUATION: YOU ARE GOING TO LUNCH FROM SCHOOL

| Consideration set containing | Number who preferred | | |
|---|---|---|---|
| | A | B | C |
| A & B | 4 | 4 | - |
| A & C | 2 | - | 6 |
| A & B | - | 3 | 6 |

Number preferring

| Task | Brand on the left | Brand on the right | Total |
|---|---|---|---|
| Retrieve/Choose | 9 | 16 | 25 |
| Stimulus-Based | 10 | 38 | 48 |

TABLE VII-13

PREFERENCES WITHIN CONSIDERATION SETS
SITUATION: YOU ARE TAKING YOUR BOYFRIEND'S/GIRLFRIENDS
PARENTS OUT TO DINNER

| Consideration set containing | Number who preferred | | |
|---|---|---|---|
| | F | E | D |
| F & E | 6 | 3 | - |
| F & D | 5 | - | 4 |
| E & D | - | 5 | 3 |

Number preferring

| Task | Brand on the left | Brand on the right | Total |
|---|---|---|---|
| Retrieve/Choose | 16 | 10 | 26 |
| Stimulus-Based | 8 | 40 | 48 |

The results of the task were very different for each usage-situation, and suggest that two alternative outcomes are possible when a subject resorts to memory-based choice. In situation 1 it appears that subjects paid more attention to other non-cuing attributes when they were asked to make their choice in two stages. As a result, the effect of the cuing attribute was outweighed by other evaluatively important attributes and choice probabilities looked very similar to the stimulus-based case.

On the other hand, in situation 2, the influence of the cuing attribute was not restricted to the first stage of the choice process. The attribute of formality appears to have an effect both at the retrieval and evaluation stages, and as a result the choice probabilities in this case looked very similar to the memory-based case.

## Cued recall task

In this task subjects were presented with the names of all eight restaurants, and asked to make a choice. This was done to ensure that subjects did not fail to retrieve any restaurants. It was predicted that in this instance, since brand retrieval did not play a role, the cuing attribute should not have as strong an influence on brand choice, and subjects' choice ranks would be similar to the stimulus-based task.

Examination of the overall choice data suggests that subjects were quite confused by this task. When they were confronted by the names of all eight restaurants, some subjects were not able to differentiate among these restaurants as clearly as they had done in previous tasks. Mean choice ranks for each restaurant in each situation are given in Table VII-14. The ranks are in the right direction, that is restaurants A, B, C were preferred in situation 1, while restaurants D, E, F were

preferred in situation 2. A possible reason for this confusion is the similarity between the restaurant names. Names of restaurants were deliberately kept simple so that they would all be similar in accessibility. However this seems to cause a problem when subjects are attempting to differentiate between these restaurants and are trying to retrieve the information they had associated with each restaurant name.

Analyses of Variance were conducted on subjects' choice ranks in this condition and those in the memory-based and stimulus-based conditions. Results of the analyses are given in Tables VII-15 and VII-16 for situation 1 and situation 2 respectively.

The results indicate that for both situations, choice ranks in the cued recall task are similar to the memory-based task and different from subjects' choices in the stimulus-based task. This is contrary to predictions. It appears that even when subjects were presented with the names of all brands, brands with high values on cuing attributes were favored over other brands. There are two possible reasons for this result:

It is likely that subjects did not perform this task as expected. As discussed, when subjects were confronted with all brand names, it appears that they were quite confused and were not able to differentiate adequately among the brands. As a result subjects may have performed this task in a similar fashion to those who did the memory-based task. That is, they may have disregarded the brand names that were given to them and simply resorted to memory to make a choice. This would explain why choice ranks in this task are similar to those in the memory-based task.

TABLE VII-14

CHOICE RANKS (OF 8) FOR
RESTAURANTS IN THE CUED RECALL CONDITION

RESTAURANTS

|  | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| SITUATION 1 | 2.75 | 2.50 | 3.50 | 4.38 | 4.68 | 6.62 | 5.12 | 6.38 |
| SITUATION 2 | 5.56 | 3.87 | 3.50 | 3.18 | 3.06 | 2.68 | 6.68 | 7.43 |

## TABLE VII-15

COMPARISON OF CHOICE RANKS IN
MEMORY-BASED AND CUED RECALL CONDITIONS (SITUATION 1)

| SOURCE | DF | TYPE III SS | F VALUE |
|--------|-----|-------------|---------|
| ORDER | 7 | 0.66666667 | 0.35 |
| TASK | 1 | 1.50000000 | 5.54** |
| TASK*ORDER | 7 | 0.66666667 | 0.35 |
| SUBJ(TASK*ORDER) | 16 | 4.33333333 | 0.27 |
| BRAND | 2 | 3.93750000 | 1.99 |
| BRAND*TASK | 2 | 0.43750000 | 0.22 |
| BRAND*ORDER | 14 | 8.39583333 | 0.61 |
| BRAND*TASK*ORDER | 14 | 12.89583333 | 0.93 |

## TABLE VII-16

COMPARISON OF CHOICE RANKS IN
THE STIMULUS-BASED AND CUED RECALL CONDITIONS (SITUATION 1)

| SOURCE | DF | TYPE III SS | F VALUE |
|--------|-----|-------------|---------|
| ORDER | 7 | 0.00000000 | 0.00 |
| TASK | 1 | 0.00000000 | 0.00 |
| TASK*ORDER | 7 | 0.00000000 | 0.00 |
| SUBJ(TASK*ORDER) | 16 | 0.00000000 | 0.00 |
| BRAND | 2 | 3.81250000 | 2.26 |
| BRAND*TASK | 2 | 11.43750000 | 6.78* |
| BRAND*ORDER | 14 | 11.68750000 | 0.99 |
| BRAND*TASK*ORDER | 14 | 10.06250000 | 0.85 |

* = $p < .01$; ** = $p < .05$

## TABLE VII-17

MEAN CHOICE RANKS (OF 3) FOR ALL THREE CONDITIONS (SITUATION 1)

TASK

| BRAND | MEMORY-BASED | STIMULUS-BASED | CUED RECALL |
|-------|--------------|----------------|-------------|
| A | 2.00 | 2.68 | 1.88 |
| B | 2.25 | 1.88 | 1.81 |
| C | 2.50 | 1.44 | 2.31 |

TABLE VII-18

COMPARISON OF CHOICE RANKS IN THE
MEMORY-BASED AND CUED RECALL CONDITIONS (SITUATION 2)

| SOURCE | DF | TYPE III SS | F VALUE |
|--------|----|-----------|---------|
| ORDER | 7 | 0.15625000 | 0.71 |
| TASK | 1 | 0.09375000 | 3.00** |
| TASK*ORDER | 7 | 0.15625000 | 0.71 |
| SUBJ(TASK*ORDER) | 16 | 0.50000000 | 0.03 |
| BRAND | 2 | 0.43750000 | 0.19 |
| BRAND*TASK | 2 | 0.06250000 | 0.03 |
| BRAND*ORDER | 14 | 19.06250000 | 1.18 |
| BRAND*TASK*ORDER | 14 | 9.43750000 | 0.58 |

TABLE VII-19

COMPARISON OF CHOICE RANKS IN THE
STIMULUS-BASED AND CUED RECALL CONDITIONS (SITUATION 2)

| SOURCE | DF | TYPE III SS | F VALUE |
|--------|----|-----------|---------|
| ORDER | 7 | 0.00000000 | 0.00 |
| TASK | 1 | 0.00000000 | 0.00 |
| TASK*ORDER | 7 | 0.00000000 | 0.00 |
| SUBJ(TASK*ORDER) | 16 | 0.00000000 | 0.00 |
| BRAND | 2 | 6.43750000 | 3.55* |
| BRAND*TASK | 2 | 9.18750000 | 5.07* |
| BRAND*ORDER | 14 | 9.06250000 | 0.71 |
| BRAND*TASK*ORDER | 14 | 10.31250000 | 0.81 |

* = p < .05

TABLE VII-20

MEAN CHOICE RANKS (OF 3) FOR ALL THREE CONDITIONS (SITUATION 2)

TASK

| BRAND | MEMORY-BASED | STIMULUS-BASED | CUED RECALL |
|-------|--------------|----------------|-------------|
| D | 218 | 1.37 | 2.06 |
| E | 2.00 | 1.87 | 2.00 |
| F | 2.00 | 2.75 | 1.94 |

The results of the retrieve/choose task suggest that the cuing attribute is influential, even after retrieval of a consideration set. It is possible that whenever the subject resorts to memory to make a choice, the influence of the cuing attribute is very strong. The situation of "going to lunch from school" cues the attribute of "distance" and this attribute is salient whenever the subject resorts to memory to make a choice. Similarly, "formality" has a strong effect in situations that cue this attribute.

This experiment cannot differentiate between these different explanations. However both suggest that memory-based choice processes are indeed different from those resorted to in stimulus-based choice situations. When the consumer uses memory to make a choice, certain attributes, cued by the situation do seem to have a strong influence on choice. The influence of these cuing attributes is diminished when the consumer is presented with all the relevant information about the brands.

In summary, this experiment clearly demonstrates the important effect of the cuing attribute on memory-based choice. It suggests that in product classes and/or choice situations when the consumer resorts to memory to make a choice, it is important to examine the effect of cues, not only on brand evaluation, but also on the retrieval of brands for consideration and choice.

The next experiment examines the role of brand cues, such as those provided by advertising or promotional material on retrieval, consideration and choice.

CHAPTER VIII

EXPERIMENT THREE

## Description of Experiment

In Chapter V marketer-controlled influences such as advertising, point-of-purchase material, and coupons were seen as having an effect on consumers' memory for brands. The ad line "Gee! I could have had a V8" presents a situation where the consumer would have chosen a V8 had she retrieved the brand prior to choice. In many instances, promotional material serve the function of "reminding" consumers, on a specific occasion, of preferred brands that they might otherwise fail to retrieve. That is, they activate the promoted brand in memory for a short period of time. In terms of the two-stage model of choice, such activation could increase the probability that the brand is included in the consumer's consideration set on a particular occasion, and could thus have a positive effect on the brand's probability of choice. Importantly, in this example, choice probabilities have been altered without any effect on brand attitudes or preferences.

Experiment Three seeks to examine the effect of such activation on the probabilities of brand retrieval, consideration and choice. In order to activate a specific brand in memory, subjects in the experiment were directly exposed (somewhat unobtrusively, with the use of a cover story) to the brand name of that particular brand for a specified period of time. Such activation of a brand in memory is referred to as brand priming. Subsequently, subjects were required to choose, retrieve, etc.,

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brands from this product class. Probabilities of retrieval, consideration and choice are compared to a "control" group of subjects who are not primed with any brand from the product class.

A brand could be primed in a number of ways. "Coke" could be activated directly in memory, upon sighting of a vending machine, or it could be primed indirectly by seeing a bottle of "Pepsi" on the shelf. Analogously, a brand prime could have a number of effects on retrieval from memory.

First, brand priming could have a direct, facilitatory effect on retrieval of the primed brand itself.

Second, brand priming could have a more general effect. When one specific brand is primed it could serve to activate related material in memory (cf., Anderson 1983; Heyer, Goring & Dannenbring 1985, Higgins & King 1981; McKoon & Ratcliff 1986). Thus priming of one brand could increase the accessibility of other similar brands in memory.

Finally, brand priming could also have an inhibitory effect on retrieval of other brands (Alba & Chattopadhyay 1985; cf., Roediger 1973, 1974; Roediger, Stellon & Tulving 1977; Slamecka 1969). Consumers primed with a particular brand name sometimes find it more difficult to retrieve competing brands.

A simple model of the events occuring during retrieval can be used to better understand the nature of priming effects on retrieval (Figures VIII-1 and VIII-2). A product class (e.g., Fast Food Places), is seen to consist of a number of subcategories (e.g., Hamburger Places, Pizza Shops, Deli's, etc.). Each subcategory, in turn, consists of a number of

FIGURE VIII-1

A SIMPLE MODEL OF EVENTS OCCURING DURING RETRIEVAL
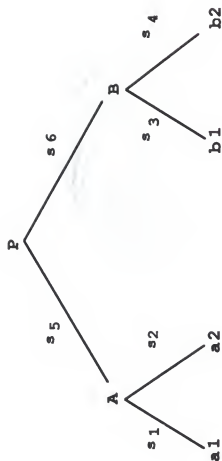
$s_1 - s_6$ are strengths of association between items

FIGURE VIII-2

EFFECTS OF PRIMING IN TWO SUBCATEGORIES

brands (Figure VIII-1). Some assumptions need to be made about the relationships between brands in the product class:

1.    The strength of association between subcategories and the product class, as well as between brands and their subcategory, will vary.   Hamburger Places are probably more strongly associated with the product class of Fast Food Restaurants than are Pizza Places. At the same time, Pizza Hut may be more strongly associated with the subcategory of Pizza Places than say, Leonardo's Pizza (some of these examples are local to Gainesville, Florida and may not be "associated" to any category for someone outside of Gainesville!).

2.    Interbrand similarity is a function of the structure of the product category.   Brands in the same subcategory are likely to be more similar to each other than brands in different subcategories. Thus Pizza Hut and Leonardo's Pizza are likely to be perceived as more similar to each other than Leonardo's and MacDonald's.

3.    The model assumes that brands are not associated directly, but are related via the categories and subcategories to which they belong (e.g.,Rundus 1973; Roediger 1974; Slamecka 1972; Watkins 1975; cf., Raaijmaker & Shiffrin 1981).   Thus priming with MacDonald's does not have a direct effect on Burger King, but rather has an indirect effect via the subcategory of "Hamburger places." The figure depicts a hierarchical organization structure (e.g., Collins & Quillian 1969; Mandler 1967; Miller 1969; Rundus 1973). In practice, brand/subcategory membership is often quite fuzzy and brands may overlap in terms of their membership in various subcategories.   In this experiment, product classes and

subcategories that appeared (in pretests) to possess a clearly differentiated structure were deliberately chosen to be able to more clearly examine the effects of brand priming on retrieval and choice.

Figure VIII-2 is a special case of Figure VIII-1 and depicts a product class (P) consisting of two subcategories (A & B). Each subcategory, in turn, consists of two brands (a1 & a2 in subcategory A and b1 & b2 in subcategory B).

The subcategories vary in terms of their association to the product class. Subcategory A is strongly associated to the product class and is likely to be brought to mind whenever the individual is thinking about the product class in question. Subcategory B is weakly associated to the product class and thus may not be brought to mind as readily, when the product class is cued. In this experiment subcategory A is labelled the Major subcategory and subcategory B the Minor subcategory.

The brands in each subcategory also vary in terms of their strength of association to the subcategory. Brands a1 and b1 (Major brands) are strongly associated to their subcategories and are therefore likely to be activated when the subcategory is cued. On the other hand brands a2 and b2 (Minor brands) are less strongly associated to their subcategories and are less likely to be activated when the subcategory is cued. It is also likely that preference for brands within a subcategory is correlated with the strength of association of these brands to the subcategory (Nedungadi & Hutchinson 1985). The major brands in a subcategory are thus likely to be preferred to the minor brand in the same subcategory. This aspect is

important in the context of predicting brand choice and will be
elaborated upon below.

Figure VIII-2 can now be used to develop specific hypotheses on the
effects of priming on brand retrieval, consideration and choice. First
however, the procedure employed in this experiment is briefly discussed.

Four groups of subjects were each primed with <u>one of the four</u> brands
a1, a2, b1 or b2. A control group of subjects had no brand in this set
primed. Thereafter all subjects were asked to retrieve, consider and
choose brands from the product class P. Subjects repeated the task for
three such product classes (Fast Food Places, Burger Condiments and
Alcohol Mixers). Effects of priming on probabilities of retrieval,
consideration and choice were measured by comparing each of the "primed"
groups with the control group.

### Effect of brand priming on brand retrieval

Table VIII-1 classifies the brands in product class P (Figure VIII-
2) in terms of subcategory and brand accessibility. Brand a1 is the
Major brand in the Major subcategory, brand a2 is the Minor brand in the
Major subcategory, brand b1 is the Major brand in the Minor subcategory
and brand b2 is the Minor brand in the Minor subcategory.

In any choice situation, the product class "node" is likely to be
activated prior to any brand choice. Similarly, in this experiment, all
subjects were told to retrieve brands <u>from a specific product class</u>.
Thus, the product class cue was provided to all subjects in the
experimental and control conditions. Accordingly, brand a1 is likely to
be highly accessible prior to any brand priming. This is not likely to
be the case for brands a2, b1 and b2. These brands may not be brought to

TABLE VIII-1

CLASSIFICATION OF BRANDS BY ACCESSIBILITY

SUBCATEGORY
ACCESSIBILITY

|  | MAJOR | MINOR |
|---|---|---|
| MAJOR | a1 | b1 |
| MINOR | a2 | b2 |

BRAND ACCESSIBILITY

mind when the product class is cued due to the weak association between them and the subcategory and/or between their subcategory and the product class.

Specific hypotheses can now be developed on the effect of brand priming within a product class.

Direct effects of a brand prime.

H1: Priming will have a positive effect on the probability of retrieval of the primed brand. The magnitude of this effect will depend on the accessibility of the brand prior to priming.

As discussed, brand a1 is highly accessible prior to any priming, while brands a2, b1 and b2 are not. Thus:

H1(a1): Priming of brand a1 will have a small, possibly insignificant effect on probability of retrieval of a1.

H1(a2): Priming of brand a2 will have a positive effect on probability of retrieval of a2.

H1(b1): Priming of brand b1 will have a positive effect on probability of retrieval of b1.

H1(b2): Priming of brand b2 will have a positive effect on probability of retrieval of b2.

Indirect effects of a brand prime-- same subcategory.

H2: Brand priming will lead to activation of the subcategory to which the primed brand belongs. This effect will transfer to other brands in the same subcategory depending on the strength of association of these brands to this activated subcategory.

When subcategories A and B are activated, the major brands al and bl should be facilitated, respectively. On the other hand, brands a2 and b2 have weaker links to the subcategory and should be less affected.

H2(ala2): Priming of brand al will have a small, possibly insignificant effect on probability of retrieval of a2.

The strong association between subcategory A and brand al should lead to activation of al whenever the subcategory is cued. However, as hypothesized above, al is likely to be accessible even prior to any priming. Thus:

H2(a2al): Priming of brand a2 will have a small, possibly insignificant effect on probability of retrieval of al.

Further,

H2(blb2): Priming of brand bl will have a small, possibly insignificant effect on probability of retrieval of b2.

and

H2(b2bl): Priming of brand b2 will have a positive effect on probability of retrieval of bl.

Indirect effects of a brand prime--different subcategory. In this experiment, priming of a brand is not expected to have any effect, positive or negative, on probabilities of retrieval of brands in other subcategories. No positive effect is expected because the brand prime is not expected to facilitate recall of other subcategories, once the product class cue is provided. No inhibitory effect is expected. As discussed, inhibitory effects have typically been in evidence in categories where there are a large number of items per category or subcategory and where the primes to brand ratio is relatively high

(Nickerson 1984). Further, brand primes have typically been quite obtrusive, and subject familiarity with the category structure has not been high. In this experiment, product categories that had a well defined category structure and a small number of brands per subcategory were deliberately chosen so as to avoid any inhibitory effects of priming. Further, the prime to brand ratio is small since only one brand from the entire category is primed. Finally, priming was kept unobtrusive through the use of a cover story during the priming manipulation.

To summarize the effects of priming on retrieval, significant direct effects are hypothesized for brands a2, b1 and b2 and a significant indirect effect is hypothesized for brand b1 when brand b2 is primed. All other effects are hypothesized to be positive but insignificant.

Effect of brand priming on brand choice

An additional factor--relative preference for brands--needs to be considered when extending effects on brand retrieval to brand choice. While priming of a brand within a subcategory may increase probability of retrieval of a number of brands within that subcategory, only (relatively) preferred brands in the consideration set will experience a resultant increase in probabililty of choice.

In examining a number of subcategories during the pretests, it was found that preference and salience were highly correlated at the subcategory level. That is, the most preferred brands within a subcategory, were also likely to be the most salient brands. Similar results were found by Nedungadi & Hutchinson (1985) when they examined correlations between prototypicality and preference. Brands that were

typical of their product category, and were therefore most likely to be retrieved, were also seen to be the brands preferred. Consumers are likely to encounter brands that they prefer, more often than brands they do not and this will increase the salience of these brands.

In the context of this experiment, the major brands in a subcategory are also likely to be the preferred brands within that subcategory. Thus brand a1 would be preferred to brand a2 within subcategory A, and brand b1 would be preferred to brand b2 within subcategory B. This suggests that when both brands from a subcategory are included in the consideration set, the Major brand will be the one chosen. The hypotheses for brand choice reflect this effect of relative preference, for brands included in the consideration set.

Direct effects on choice.

H3: Direct, positive effects on retrieval will translate into positive effects on choice only for major brands in a subcategory.

Brand priming was hypothesized to have a positive effect on retrieval of brands a2, b1 and b2. However, of these brands, a2 and b2 are Minor brands in their subcategories. Since these brands will be in consideration sets that include the major brand in their subcategories, neither of them should experience any significant increase in their probability of choice. Thus:

H3(a1): Priming of brand a1 will have a small, possibly insignificant effect on probability of choice of a1.

H3(a2): Priming of brand a2 will have a small, possibly insignificant effect on probability of choice of a2.

H3(b1): Priming of brand b1 will have a positive effect on probability of choice of b1.

H3(b2): Priming of brand b2 will have a small, possibly insignificant effect on probability of choice of b2.

Indirect effects on choice.

H4: Indirect, positive effects on retrieval will translate into positive effects on choice only for major brands in a subcategory.

The only positive, indirect effect hypothesized above was the effect of priming brand b2 on b1. Since b1 is a Major brand, this effect should translate to choice. Thus:

H4(a1a2): Priming of brand a1 will have a small, possibly insignificant effect on probability of choice of a2.

H4(a2a1): Priming of brand a2 will have a small, possibly insignificant effect on probability of choice of a1.

H4(b1b2): Priming of brand b1 will have a small, possibly insignificant effect on probability of choice of b2.

H4(b2b1): Priming of brand b2 will have a positive effect on probability of choice of b1.

To summarize the effects of priming on choice, only brand b2 - the Major brand in the Minor subcategory - will experience any significant facilitation in probability of choice due to brand priming. All other brands will experience positive but insignificant effects on choice due to brand priming.

The above hypotheses suggest that brand priming within a subcategory could have some interesting, asymmetric effects. For instance while

priming of brand b2 - the Minor brand in the Minor subcategory - does not lead to any improvement in its own choice probability, it leads to an increase in choice of brand b1 - the Major brand in the same subcategory.

## Effect of brand priming on brand consideration

As discussed in Chapter III, the consideration set mediates the processes of brand retrieval and brand choice. When choice is purely memory-based (as in this experiment), all brands retrieved will initially belong in the consideration set. As the consumer gets closer to choice however, brands in the consideration set will be screened for negativity and may be dropped if they are negatively evaluated. As discussed, the final consideration set is the consumer's choice set. In this experiment, subjects were first asked to make a choice, then asked for all brands they had considered during that choice, and finally asked to retrieve as many brands as they could. In this instance the consideration set provided by subjects is likely to be closer to the choice set than to the retrieval set. That is, subjects are likely to have screened brands for negativity before listing them as brands they had considered during choice.

While no specific hypotheses are listed for the probability of brand consideration, it is likely in this instance that the effects of priming on probability of consideration will be similar to the hypothesized effects of priming on probability of brand choice.

## Effects of brand priming on brand preference

In line with the objectives of this dissertation, the predictions made above assume that probabilities of choice are affected merely by influencing which brands are retrieved or "brought to mind," without any

mediating effects on (absolute) preferences for the brands considered. This is achieved in an experimental context by ensuring that the brand primes are relatively unobtrusive and further do not provide any evaluative information on the brands. Thus:

> H5: In this experiment, priming of a brand is not hypothesized to have any influence on preferences for brands in the product class.

## Subjects

One-hundred-and-four subjects enrolled in an undergraduate consumer behavior course at the University of Florida, participated in this experiment. Subjects were given credit which, in part, fulfilled certain lab requirements of the course.

## Stimuli

Pretests were run to identify product categories that :

(i) did not have a very large number of members. If the categories are very large, the effect of priming on any one brand (or set of brands) would be more difficult to measure.

(ii) had a clearly perceived amd familiar category structure. Category structure is more likely to have a measurable effect on brand retrieval if such structure is perceived and used by the consumer.

(iii) had a fair number of subcategories. This increases the likelihood that some of these subcategories would be relatively less accessible and could serve as minor subcategories.

Specific types of categories were used in this experiment so as to be able to obtain measurable and statistically significant effects. The use of these categories does not however preclude finding similar

"priming" effects with the less precise categories that one encounters in practice.

After these pretests, three specific product classes were chosen for the experiment. These product classes and the subcategories and brands within them are listed in Table VIII-2.

It was then necessary to identify the Major and Minor subcategories and brands and the relative preference for the brands, in each of the chosen product categories. A pretest was run on the same group of subjects that participated in the main experiment. This ensured that the accessibility and preference factors were relevant to this group. So as to minimize carryover effects from the pretest to the experiment, a priori accessibility was measured somewhat indirectly. Subjects were asked to indicate their usage of and preference for a large list of commonly used brands. Brands in the three product categories of interest were included in this list. Preference data were obtained directly for each of the relevant brands. Degree of usage of brands within a subcategory was used as an indicator of a brand's salience within that subcategory. It was assumed that brands that were low in terms of usage were minor brands while brands that were high in usage within a subcategory were major brands within that subcategory. Major and minor subcategories were identified by averaging usage for the brands within that subcategory and choosing subcategories on opposite ends of the continuum. This pretest also confirmed the earlier findings that the major brands in each subcategory were also the preferred brands in that subcategory. Preference and salience are however measured directly in the main experiment.

<u>TABLE VIII-2</u>

PRODUCT CLASSES, SUBCATEGORIES AND BRANDS CHOSEN FOR EXPERIMENT 3

PRODUCT CLASS 1: FAST FOOD RESTAURANTS

    SUBCATEGORIES:

1. HAMBURGER PLACES
2. MEXICAN PLACES
3. CHICKEN PLACES
4. DELIS
5. PIZZA PLACES
6. ROAST BEEF PLACES

       BRANDS:

1. MACDONALD'S
2. BURGER KING
3. WENDY'S
4. TACO VIVA
5. BURRITO BROTHERS
6. TACO BELL
7. CHURCH'S FRIED CHICKEN
8. KENTUCKY FRIED CHICKEN
9. JOE'S DELI
10. SUBWAY
11. PIZZA HUT
12. GODFATHER'S PIZZA
13. LEONARDO'S PIZZA
14. RAX
15. ARBY'S
16. HARDEE'S

TABLE VIII-2--continued

PRODUCT CLASS 2: BURGER CONDIMENTS

SUBCATEGORIES:

1. MUSTARD
2. BARBECUE SAUCE
3. STEAK SAUCE
4. PICKLE/RELISH

BRANDS:

1. GULDEN'S MUSTARD
2. FRENCH'S MUSTARD
3. GREY'S POUPON MUSTARD
4. HEINZ BARBECUE SAUCE
5. HUNT'S BARBECUE SAUCE
6. L&P WORCESTERSHIRE SAUCE
7. A-1 STEAK SAUCE
8. HEINZ 57 SAUCE
9. HEINZ RELISH
10. VLASIC PICKLE

TABLE VIII-2--continued

PRODUCT CLASS 3: ALCOHOL MIXERS

    SUBCATEGORIES:

    1.    ORANGE JUICE
    2.    CRANBERRY JUICE
    3.    FRUITY MIXES
    4.    AERATED MIXES
    5.    TOMATO JUICE
    6.    GRAPEFRUIT JUICE

    BRANDS:

    1.    TROPICANA ORANGE JUICE
    2.    MINUTE MAID ORANGE JUICE
    3.    CITRUS HILL ORANGE JUICE
    4.    OCEAN SPRAY CRANBERRY JUICE
    5.    WELCH'S CRANBERRY JUICE
    6.    COCO LOPEZ PINA COLADA MIX
    7.    HOLLAND HOUSE MARGARITA MIX
    8.    CANADA DRY CLUB SODA
    9.    CANADA DRY TONIC WATER
    10.    SCHWEPPES TONIC WATER
    11.    V8 TOMATO JUICE
    12.    DEL MONTE TOMATO JUICE
    13.    MINUTE MAID GRAPEFRUIT JUICE
    14.    TROPICANA GRAPEFRUIT JUICE

Following this pretest, two brands were chosen from each of two subcategories in each product class. These brands served as the primes for the main experiment. The subcategories and brands chosen are listed in Table VIII-3. Corresponding to Table VIII-1 the table also indicates the brands a1, a2, b1 and b2 in each product class.

## Procedure

As discussed previously, the basic purpose of Experiment III is to prime subjects with a specific brand and then measure their responses in terms of retrieval, preference and choice for a related set of brands.

Upon arrival, subjects were seated in front of a CRT terminal controlled by an IBM PC XT micro computer, which was used to present the information. As a cover story they were informed (on the screen) that certain companies were interested in their opinions of a number of commonly available brands. For this purpose, they would be required to agree or disagree with a number of brand statements by indicating merely whether these were true or false. They were asked to maintain a fair speed, but at the same time to ensure that their answers were accurate. Table VIII-4 details the exact sequence of tasks.

The computer randomly assigned subjects to one of five priming conditions. The principal factor in the experiment consisted of a between groups manipulation of the brand primed. There were five levels of this factor. Subjects in the first four levels were primed with one of the four "target" brands listed in Table VIII-3 for each product class. That is, subjects in one group were primed with the Major Brand in the Major Subcategory, while for those in another group the Minor Brand in the Major Subcategory served as the target brand, and so on.

TABLE VIII-3

SUBCATEGORIES AND BRANDS CHOSEN FOR PRIMING MANIPULATION

|    | FAST FOOD PLACES | BURGER CONDIMENTS | ALCOHOL MIXERS |
|----|------------------|-------------------|----------------|
| A1 | MACDONALD'S | FRENCH'S MUSTARD | TROPICANA O.J. |
| A2 | WENDY'S | GREY POUPON MUSTARD | CITRUS HILL O.J. |
| B1 | JOE'S DELI | VLASIC PICKLE | COCO LOPEZ PINA COLADA MIX |
| B2 | SUBWAY | HEINZ RELISH | HOLLAND HOUSE MARGARITA MIX |

TABLE VIII-4

SEQUENCE OF TASKS FOR EXPERIMENT 3

SUBJECTS SEATED AT TERMINALS
|
|
|
INSTRUCTIONS & PRACTICE TASKS
|
|
|
EXPOSED TO PRIMING MANIPULATION
|
|
|
PRESENTED WITH CHOICE SITUATION
|
|
|
ASKED TO INDICATE:
1. BRAND CHOSEN
2. BRANDS CONSIDERED
3. ALL BRANDS RECALLED

TASK REPEATED FOR ALL THREE PRODUCT CLASSES
|
|
|
ASKED TO INDICATE:
4. PREFERENCES FOR FULL LIST
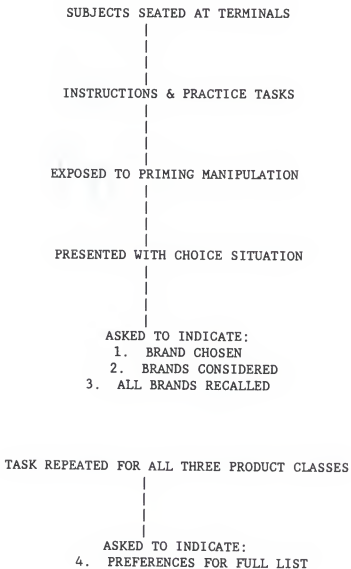
The fifth level consisted of a control group of subjects that were not exposed to any of the target brands as part of the priming manipulation. Once the priming manipulation was completed for one product class, subjects performed a number of tasks that will be described in detail below. They then went on to the priming manipulation and related tasks for the second and third product classes. Order of product class presentation was counterbalanced across subjects. Since measurement of the effects of priming at all four priming levels, necessitated comparisons with the control group, almost twice as many (thirty-two) subjects were assigned to the control group as were assigned to each of the other four levels (eighteen).

### Priming manipulation

Brand priming was achieved by embedding three statements about the target brand within nine control statements, three each about three other brands (see Appendix III-A). Subjects were required to answer True (T) or False (F) to each of these statements by depressing specially marked keys on their keyboard. The first statement appeared on the screen and the subject was required to respond (T or F) to this statement. Once he/she had done this, this statement was replaced by the second statement, and so on, until the subject had responded to all twelve (nine for the control group) statements. Thus, in the space of a minute or two, subjects in the priming conditions responded to twelve separate statements about four different brands. To ensure that the priming was relatively unobtrusive and that these subjects could not differentiate between target and other brands, statements about all brands were fairly similar (see Appendix III-A).

Since the primes are hypothesized to have no effect on relative preferences for brands, the statements were all factual in nature, and in order to respond to them subjects did not have to make any evaluations about the brands. Further, the statements only primed brands and did not directly prime subcategories or the product classes to which the brands belonged. Subjects in the control group responded to nine statements only, since the three statements about the target brand were not included in their case.

### Choice, consideration and recall tasks

Immediately after they had responded to the twelve (nine) statements, subjects were informed that Phase I of the experiment was complete. They were then requested to go on to Phase II, for which the responses were to be provided on paper. In Phase II, subjects were presented with a specific situation within which they would consider using brands in the relevant product class (the product class which contained the target brand that had just been primed). The situations used for each product class are listed in Appendix III-B. The computer presented the relevant situation on the screen and subjects were asked to imagine themselves going through the described situation. Once they had "imagined themselves in the situation," they could hit any key on the keyboard and go on to the subsequent tasks. The computer then presented them with the following sequence of tasks, one at a time.

Choice: First, they were required to indicate their brand choice for that situation.

Consideration Set: Next they were asked to list the names of other

brands, if any, that they had considered while they were making their brand choice.

Recall: Finally, they were asked if they could recall any other brands in the product class. They were given <u>two minutes</u> to recall and list any other brands that they could remember, <u>regardless of whether they evaluated them favorably for choice</u>.

The choice, consideration and recall tasks were deliberately ordered as above. While the experiment is interested in the effect of priming on probabilities of recall and consideration, the primary dependent variable of interest is the probability of brand choice. For this reason, it was considered important not to "force" any mediating processes between priming and choice.

Once subjects had completed Phase II of the experiment for the first product class they were informed that they would be required to repeat the same tasks for another product class.

When they had completed both Phases I and II for all three product classes, they were informed that there was one additional task.

Preference/purchase likelihood

For this task subjects were presented with the full list of brands in each product class (Table VIII-2). They were required to indicate their preference for each brand using a nine-point purchase likelihood scale.

Once they had completed the rating task for all three product classes subjects were debriefed and thanked for participating in the experiment. Subjects typically took between twenty-five and thirty minutes to complete the entire experiment.

## Results and Discussion

The results of Experiment Three are analyzed in two parts. The various hypotheses listed above are first tested. Subsequently, the data generated from the experiment are used to assess whether the model of memory described above provides a good approximation of the events that occur during brand retrieval.

## Part one: testing of hypotheses

Subjects were primed with a specific brand from a product class. The effects of this prime on retrieval, consideration, choice and preference for brands in this product class are of interest.

Measures on the dependent variables of choice, retrieval and consideration were binary (one if the brand was chosen/recalled/ considered and zero otherwise). As mentioned earlier, brand preference was measured on a nine-point purchase likelihood scale.

Data (across all five priming levels) for each brand were analyzed to test for effects of the order of product class presentation. Order of presentation had no significant effects on scores of any of these dependent variables and the data were thus collapsed across all three presentation orders.

The data were then analyzed for differences across product classes. Analysis of Variance was used to examine whether the overall pattern of results obtained for each dependent variable, was different across product classes. For the dependent variable of retrieval the differences across product classes were insignificant ($F_{24,552} = 0.68$; p>.80). For the dependent variables of choice and consideration the differences

across product class were marginally significant ($F_{24, 552} = 1.39$; p=.10 & $F_{24, 552} = 1.49$; p<.07 respectively).

Tables VIII-5 to VIII-8 present the means aggregated across all product classes, for each of the dependent variables in turn. Tables VIII-9 to VIII-12 present the relevant means for each product class. In the cases of retrieval, consideration and choice, the mean scores represent the proportion of subjects in that priming condition, that retrieved/ considered/chose the relevant brand.

Results of analysis of the aggregate data will be presented first. These data will be used to test the hypotheses detailed earlier. Results of the analyses in the individual product classes will be referred to only when there are differences between the analysis at the individual and aggregate levels.

Since the dependent variables are binary (0,1), the maximum-likelihood method (PROC CATMOD (SAS 1985)) was used to estimate the parameters of the model. The various hypotheses were tested by specific contrasts between the relevant cells. For this purpose, CATMOD computes statistics which are approximately distributed as Chi-square (SAS 1985).

<u>Manipulation checks</u>. Before specific hypotheses are tested, it is necessary to verify that the brands and subcategories chosen as stimuli fall into the major and minor categories, as discussed above. For this purpose the retrieval proportions and preference ratings of each of the four brands in each product class were compared. Scores in the control group, where no brand priming occured were used for this purpose. Examination of the retrieval proportions (Tables VIII-5 and VIII-9) reveal that the four brands are ordered as expected. The major brands in

TABLE VIII-5

AGGREGATE DATA ACROSS ALL THREE PRODUCT CLASSES: RETRIEVAL

| BRANDS PRIMED | RETRIEVAL PROPORTIONS[a] FOR | | | |
| | A1 | A2 | B1 | B2 |
| --- | --- | --- | --- | --- |
| NONE | 0.74 | 0.32 | 0.28 | 0.13 |
| A1 | 0.81** | 0.43 | 0.38 | 0.17 |
| A2 | 0.78 | 0.65* | 0.33 | 0.11 |
| B1 | 0.65 | 0.38 | 0.77* | 0.15 |
| B2 | 0.69 | 0.38 | 0.60* | 0.58* |

* p< .05; ** p<.10

TABLE VIII-6

AGGREGATE DATA ACROSS ALL THREE PRODUCT CLASSES: CHOICE

| BRANDS PRIMED | CHOICE PROPORTIONS FOR | | | |
| | A1 | A2 | B1 | B2 |
| --- | --- | --- | --- | --- |
| NONE | 0.18 | 0.10 | 0.05 | 0.04 |
| A1 | 0.36* | 0.08 | 0.06 | 0.00 |
| A2 | 0.19 | 0.19* | 0.11 | 0.04 |
| B1 | 0.27 | 0.04 | 0.31* | 0.00 |
| B2 | 0.21 | 0.04 | 0.19* | 0.05 |

* p< .05; ** p<.10

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

TABLE VIII-7

AGGREGATE DATA ACROSS ALL THREE PRODUCT CLASSES:CONSIDERATION

| BRANDS PRIMED | CONSIDERATION PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | A1 | A2 | B1 | B2 |
| NONE | 0.52 | 0.25 | 0.14 | 0.08 |
| A1 | 0.68* | 0.23 | 0.11 | 0.02 |
| A2 | 0.54 | 0.43* | 0.20 | 0.06 |
| B1 | 0.54 | 0.19 | 0.58* | 0.08 |
| B2 | 0.42 | 0.25 | 0.46* | 0.27* |

* $p < .05$; ** $p < .10$

TABLE VIII-8

AGGREGATE DATA ACROSS ALL THREE PRODUCT CLASSES: PREFERENCE

| BRANDS PRIMED | PREFERENCE SCORES FOR | | | |
|---|---|---|---|---|
| | A1 | A2 | B1 | B2 |
| NONE | 5.96 | 5.12 | 4.83 | 3.39 |
| A1 | 6.32 | 5.34 | 5.71 | 3.74 |
| A2 | 6.05 | 5.69 | 5.66 | 4.16 |
| B1 | 6.23 | 4.83 | 5.25 | 3.22 |
| B2 | 5.88 | 4.82 | 5.67 | 3.40 |

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

TABLE VIII-9

RETRIEVAL PROPORTIONS FOR EACH PRODUCT CLASS

FAST FOOD PLACES

| BRANDS PRIMED | RETRIEVAL PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | MACDONALDS | WENDY'S | JOE'S DELI | SUBWAY |
| NONE | 0.91 | 0.70 | 0.42 | 0.21 |
| MACDONALD'S | 0.89 | 0.89** | 0.44 | 0.21 |
| WENDY'S | 0.94 | 0.77 | 0.50 | 0.11 |
| JOE'S DELI | 0.88 | 0.61 | 0.94* | 0.17 |
| SUBWAY | 1.00 | 0.72 | 0.83* | 0.61* |

* $p < .05$; ** $p < .10$

BURGER CONDIMENTS

| BRANDS PRIMED | RETRIEVAL PROPORTIONS FOR | | | |
|---|---|---|---|---|
| | FRENCH'S | GREY'S | VLASIC | HEINZ |
| NONE | 0.53 | 0.22 | 0.28 | 0.19 |
| FRENCH'S MUSTARD | 0.72 | 0.39 | 0.39 | 0.22 |
| GREY'S POUPON MUSTARD | 0.72 | 0.61* | 0.27 | 0.22 |
| VLASIC PICKLE | 0.50 | 0.33 | 0.72* | 0.28 |
| HEINZ RELISH | 0.61 | 0.33 | 0.56* | 0.72* |

* $p < .05$; ** $p < .10$

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

TABLE VIII-9--continued

ALCOHOL MIXERS

| BRANDS PRIMED | RETRIEVAL PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | TROPICANA | CITRUS HILL | COCO LOPEZ | H.HOUSE |
| NONE | 0.77 | 0.03 | 0.13 | 0.00 |
| TROPICANA O.J. | 0.82** | 0.00 | 0.29 | 0.00 |
| CITRUS HILL O.J. | 0.67 | 0.55* | 0.22 | 0.00 |
| COCO LOPEZ MIX | 0.56 | 0.19 | 0.63* | 0.00 |
| HOLLAND HOUSE MIX | 0.44 | 0.06 | 0.37* | 0.37* |

* p< .05; ** p<.10

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

## TABLE VIII-10

### CHOICE PROPORTIONS FOR EACH PRODUCT CLASS

FAST FOOD PLACES

| BRANDS PRIMED | CHOICE PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | MACDONALDS | WENDY'S | JOE'S DELI | SUBWAY |
| NONE | 0.09 | 0.27 | 0.09 | 0.12 |
| MACDONALD'S | 0.22 | 0.05 | 0.00 | 0.00 |
| WENDY'S | 0.06 | 0.28 | 0.16 | 0.05 |
| JOE'S DELI | 0.22 | 0.05 | 0.44* | 0.00 |
| SUBWAY | 0.16 | 0.00 | 0.33* | 0.00 |

* p< .05; ** p<.10

BURGER CONDIMENTS

| BRANDS PRIMED | CHOICE PROPORTIONS FOR | | | |
|---|---|---|---|---|
| | FRENCH'S | GREY'S | VLASIC | HEINZ |
| NONE | 0.22 | 0.03 | 0.00 | 0.00 |
| FRENCH'S MUSTARD | 0.39 | 0.17 | 0.05 | 0.00 |
| GREY'S POUPON MUSTARD | 0.28 | 0.22* | 0.05 | 0.05 |
| VLASIC PICKLE | 0.33 | 0.06 | 0.22* | 0.00 |
| HEINZ RELISH | 0.22 | 0.11 | 0.11* | 0.05 |

* p< .05; ** p<.10

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

TABLE VIII-10--continued

ALCOHOL MIXERS

| BRANDS PRIMED | CHOICE PROPORTIONS[a] FOR | | | |
| --- | --- | --- | --- | --- |
| | TROPICANA | CITRUS HILL | COCO LOPEZ | H.HOUSE |
| NONE | 0.22 | 0.00 | 0.06 | 0.00 |
| TROPICANA O.J. | 0.47** | 0.00 | 0.12 | 0.00 |
| CITRUS HILL O.J. | 0.22 | 0.06 | 0.11 | 0.00 |
| COCO LOPEZ MIX | 0.25 | 0.00 | 0.25** | 0.00 |
| HOLLAND HOUSE MIX | 0.25 | 0.00 | 0.13 | 0.13 |

* p< .05; ** p<.10

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

## TABLE VIII-11

CONSIDERATION PROPORTIONS FOR EACH PRODUCT CLASS

FAST FOOD PLACES

| BRANDS PRIMED | CONSIDERATION PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | MACDONALDS | WENDY'S | JOE'S DELI | SUBWAY |
| NONE | 0.63 | 0.57 | 0.15 | 0.12 |
| MACDONALD'S | 0.78 | 0.44 | 0.11 | 0.05 |
| WENDY'S | 0.50 | 0.56 | 0.33 | 0.05 |
| JOE'S DELI | 0.72 | 0.22 | 0.72* | 0.05 |
| SUBWAY | 0.50 | 0.44 | 0.61* | 0.22** |

* $p < .05$; ** $p < .10$

BURGER CONDIMENTS

| BRANDS PRIMED | CONSIDERATION PROPORTIONS FOR | | | |
|---|---|---|---|---|
| | FRENCH'S | GREY'S | VLASIC | HEINZ |
| NONE | 0.31 | 0.16 | 0.19 | 0.13 |
| FRENCH'S MUSTARD | 0.55 | 0.22 | 0.11 | 0.00 |
| GREY'S POUPON MUSTARD | 0.50 | 0.39 | 0.17 | 0.11 |
| VLASIC PICKLE | 0.50 | 0.28 | 0.50* | 0.17 |
| HEINZ RELISH | 0.44 | 0.28 | 0.39* | 0.22 |

* $p < .05$; ** $p < .10$

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

TABLE VIII-11--continued

ALCOHOL MIXERS

| BRANDS PRIMED | CONSIDERATION PROPORTIONS[a] FOR | | | |
|---|---|---|---|---|
| | TROPICANA | CITRUS HILL | COCO LOPEZ | H.HOUSE |
| NONE | 0.61 | 0.00 | 0.09 | 0.00 |
| TROPICANA O.J. | 0.70* | 0.00 | 0.12 | 0.00 |
| CITRUS HILL O.J. | 0.61 | 0.33* | 0.11 | 0.00 |
| COCO LOPEZ MIX | 0.37 | 0.06 | 0.43* | 0.00 |
| HOLLAND HOUSE MIX | 0.31 | 0.00 | 0.38* | 0.38* |

* p< .05; ** p<.10

[a]Reported tests are between proportions in each priming condition and proportions in the three other conditions where no brand from the same subcategory was primed. Only cells relevant to the hypotheses were tested.

## TABLE VIII-12

### PREFERENCE SCORES FOR EACH PRODUCT CLASS

FAST FOOD PLACES

| BRANDS PRIMED | PREFERENCE SCORES FOR | | | |
|---|---|---|---|---|
| | MACDONALDS | WENDY'S | JOE'S DELI | SUBWAY |
| NONE | 4.61 | 6.27 | 5.15 | 3.48 |
| MACDONALD'S | 5.77 | 6.00 | 5.94 | 3.44 |
| WENDY'S | 4.39 | 5.88 | 5.55 | 3.61 |
| JOE'S DELI | 5.55 | 6.16 | 6.16 | 2.77 |
| SUBWAY | 5.16 | 5.72 | 6.05 | 2.94 |

BURGER CONDIMENTS

| BRANDS PRIMED | PREFERENCE SCORES FOR | | | |
|---|---|---|---|---|
| | FRENCH'S | GREY'S | VLASIC | HEINZ |
| NONE | 6.29 | 4.29 | 4.83 | 4.19 |
| FRENCH'S MUSTARD | 5.83 | 4.77 | 5.55 | 3.44 |
| GREY'S POUPON MUSTARD | 7.05 | 5.38 | 5.27 | 4.55 |
| VLASIC PICKLE | 6.50 | 3.72 | 5.22 | 4.33 |
| HEINZ RELISH | 6.22 | 4.55 | 5.11 | 3.22 |

ALCOHOL MIXERS

| BRANDS PRIMED | PREFERENCE SCORES FOR | | | |
|---|---|---|---|---|
| | TROPICANA | CITRUS HILL | COCO LOPEZ | H.HOUSE |
| NONE | 7.13 | 4.77 | 4.59 | 2.00 |
| TROPICANA O.J. | 7.41 | 5.24 | 5.65 | 4.50[*] |
| CITRUS HILL O.J. | 6.72 | 5.78 | 6.17 | 4.36[*] |
| COCO LOPEZ MIX | 6.85 | 5.00 | 4.64 | 2.58 |
| HOLLAND HOUSE MIX | 6.31 | 4.06 | 5.87 | 4.12[*] |

[*] $p < .05$.

the major subcategories are all more salient than the minor brands in these subcategories and in all cases, these differences are significant. Brand a1 is significantly more salient than a2 ($\chi^2$=31.29; p<.0001) and brand b1 is more salient than b2 ($\chi^2$=39.56; p<.0001). These differences are consistent across product categories.

During the earlier discussion, it was assumed, in line with pretests and previous research, that the correlation between relative preference and salience would be high at the subcategory level. As a result it was expected that preference for brands within each subcategory would follow the same order as the salience of these brands. This assumption was examined with the preference data in Tables VIII-8 and is supported for both pairs of brands. Brand a1 is preferred to brand a2 (t = 4.56; p<.001) and brand b1 is preferred to brand b2 (t = 9.91; p<.001). At the individual product category level, one significant exception is the case of MacDonald's and Wendy's. While Macdonald's is more salient than Wendy's, Wendy's is significantly preferred over MacDonald's (t = 2.68; p<.01). This pattern of preferences should also be reflected in choice and suggests that when both Wendy's and MacDonald's are retrieved, Wendy's will be chosen in preference to MacDonald's.

The retrieval data also confirm that the priming manipulation was relatively unobtrusive. Brand retrieval proportions do not increase to one even when the specific brand is primed. That is, some subjects fail to retrieve a brand even under conditions where the brand has been included in the priming manipulation. This is unlikely to be the case if the priming manipulation was direct and the subject was "forced" to consider the primed brand.

Tests of the hypotheses on brand priming entail comparisons between the primed groups and the groups that are not primed in that instance. As discussed, subjects were divided into five groups. One group of control subjects did not receive any prime from within the product class. Four other groups were primed with one of the brands in the product class. Of these, two groups were primed with a brand from one subcategory while another two groups were primed with a brand from another subcategory. To test the effects of brand priming on any one group, the retrieval/choice/consideration proportions of this group should be contrasted with the same proportions <u>in the three groups that were not primed with a brand from the same subcategory</u>. Thus, for instance, to test for the direct effect of priming brand a1 on retrieval of a1, retrieval proportions of the group primed with a1 were contrasted with the (combined) retrieval proportions of the control group and the groups primed with brands from the contrast subcategory (brands b1 and b2).

However, before this can be done, it is necessary to ensure that retrieval of brand a1 was not inhibited when brands b1 and b2 were primed. Thus, as a first step, the aggregate data were analyzed for evidence of inhibition effects. No significant inhibition effects were found for any of the dependent variables of retrieval, consideration and choice. This justifies the use of the contrast described above.

Results will be discussed below in terms of the hypotheses detailed earlier, for the aggregate data (Tables VIII-5 to VIII-8). Differences at the individual product class level will be noted.

Retrieval. Data relevant to Hypotheses 1 and 2 are presented in Table VIII-5.

For retrieval, significant direct priming effects were expected for brands a2, b1 and b2 and a significant indirect effect was expected for brand b1 when brand b2 was primed. The aggregate results support these hypotheses. Priming of brand a2 facilitates retrieval of this brand ($x^2$=13.12; p<.001). Similar effects are observed for b1 ($x^2$=27.72; p<.0001) and b2 ($x^2$=37.17; p<.0001). These results support Hypotheses H1(a2), H1(b1) and H1(b2). The only exception in all three product classes is Wendy's in the product class of Fast Food Places. Priming with Wendy's does not have a significant effect on retrieval of this brand. Comparison of the three product classes indicates that Wendy's may not be a "Minor" brand in the Major subcategory of Burger Places. The retrieval proportion for Wendy's (in the control group) is 0.70, as compared to proportions of 0.22 & 0.03 for the other Minor brands (see Table VIII-9). This explains why Wendy's was not facilitated to any significant degree.

Hypothesis H1(a1) posits that the direct effect of priming on brand a1 would be small and possibly insignificant. However, this effect is marginally significant ($x^2$=2.65; p<.104). Examination of the individual product classes indicates that this is probably due to the direct effect of priming Tropicana Orange Juice in the product category of Alcohol Mixers (Table VIII-9).

Significant indirect effects of priming on retrieval were hypothesized for brand b1 only. The aggregate data support this hypothesis. When brand b2 is primed, this leads to an increase in

retrieval of b1 ($\chi^2$=11.66; p<.001). This is in support of Hypothesis H2(b2b1). None of the other indirect priming effects are significant. The only indirect priming effect that gains (marginal) significance in the individual product classes is the effect of priming MacDonald's on retrieval of Wendy's ($\chi^2$=2.80; p<.10). This is probably a spurious result.

These results provide strong support for the hypothesized effects of priming on retrieval. They suggest that, in instances when consumers rely on memory to retrieve a set of brands for choice, contextual cues could have strong effects on the set of brands retrieved and included in the consideration set.

The next set of hypotheses to be tested, extend these effects on brand retrieval to brand choice itself. Importantly, it is hypothesized that such effects on retrieval would carry over to probabilities of brand choice, without any effect on preferences for the alternatives considered. The effects of brand priming on choice are thus examined next.

<u>Choice</u>. The aggregate data relevant to Hypotheses 3 and 4 are presented in Table VIII-6.

Brand b1 was hypothesized to experience any significant facilitation due to direct and indirect priming. Direct priming of brand b1 increases its probability of choice ($\chi^2$=18.38; p<.0001). As well, priming with brand b2 helps b1 ($\chi^2$=6.52; p<.01). This is in support of Hypotheses H3(b1) and H4(b2b1) and is supported in two of three product classes. The only exception is the product category of Alcohol Mixers (Table VIII-10). In this product class, priming with Holland House Margarita Mix

does not increase probability of choosing Coco Lopez Pina Colada Mix.
Thinking back to the product class of Alcohol Mixers, it is possible that
Coco Lopez Pina Colada Mix and Holland House Margarita Mix are not in
fact considered to be very similar.  This would explain why priming with
Holland House increases probability of choosing this brand and does not
increase probability of choosing Coco Lopez.  While these two brands are
relatively similar when compared to Orange Juice or other mixers, they do
not share much in common when compared with each other.  This would
reduce the probability that subjects would think of them as substitutes
for choice in a particular situation.  Another unique characteristic of
the product class of Alcohol Mixers is also relevant to this issue.
While running the experiment it was found that a number of subjects were
not very familiar with this product class and often did not use mixers.
This is reflected in the extremely low salience and low choice
probabilities of brands other than Tropicana Orange Juice (Tables VIII-9
and VIII-10).  In this case, subjects were not really involved in the
choice situation and may not have established preferences for brands.  It
is less likely that the hypothesized effects on choice would be supported
in this instance.  In this product class too, facilitation occurs but is
not significant.

Priming was not expected to facilitate choice of any of the other
brands. The aggregate data indicate that this is not the case.  Both
brands a1 ($x^2$=4.33; p<.05) and a2 ($x^2$=7.61; p<.01) are significantly
facilitated by direct priming.  Examination of the individual product
classes indicates that this result may be due to two separate brands.  In
the product class of Alcohol Mixers, priming with Tropicana Orange Juice

leads to a marginally significant increase in its probability of choice. This effect could be due to the subjects' lack of involvement with the product category. Subjects may simply have "chosen" the brand that they remembered as they were not particularly familiar with other brands in the product class. In the product class of Burger Condiments, priming with Grey's Poupon Mustard leads to a significant increase in its probability of choice.

   Consideration. Data on the probabilities of brand consideration are presented in Table VIII-7 for the aggregate and in VIII-11 for each product class in turn. These data are very similar to the retrieval data just discussed. As discussed earlier, subjects provided their consideration sets, prior to the retrieval task, and after they had made a choice.

   Effects very similar to those observed for brand retrieval are observed when brands in the major subcategory are primed. Further, in all three product classes, priming with the major brand in the minor subcategory facilitates consideration of that brand only. As in the case of brand retrieval priming with the minor brand in the minor subcategory aids the major brand in that subcategory.

   The results of priming on retrieval/consideration and choice are, for the most part, in support of the hypotheses detailed earlier. Importantly, brand priming is shown to have specific, retrieval-mediated effects on brand choice, predicted by the model of memory described earlier. It is also important to establish that these effects on choice are purely effected by changes in probabilities of retrieval, without any

mediating effect on preferences for the alternatives considered. The results of the analysis of preference data are discussed below.

   Preference.   Aggregate data on brand preference is presented in Table VIII-8.

   Hypothesis 5 states that brand priming will have no influence on preferences for brands in the product class. Since subjects used a rating scale to indicate their preferences, the data was analysed using Analysis of Variance. There is no significant difference in preferences across the five priming conditions for brands $a1(F_{4,302} = 0.30;\ p>.85)$, $a2(F_{4,297} = 1.60;\ p>.15)$ or $b2(F_{4,281} = 1.12;\ p>.30)$. Thus hypothesis 5 is supported by the data. The priming manipulation does not affect preferences for brands in any of the priming conditions. In examining the individual product classes, the only exception is the brand of Holland House Margarita Mix in the product class of Alcohol Mixers. Preference for this brand is significantly greater than that for the control group in three of the priming conditions. This effect is chiefly due to the extremely low preference for Holland House in the control group and is probably attributable to individual differences in this group.

   To summarize, brand priming is seen to have a clear effect on retrieval and choice, without, in this instance, having any effect on relative preference for the brands considered. Thus, brand choice probabilities have been influenced, merely by affecting which alternatives are "brought to mind," without any effect on brand evaluation.

At the beginning of this chapter, a simple model of the events occuring during retrieval was used to generate various hypotheses on the effects of brand priming on brand retrieval. The first part of this section tests these hypotheses. In the next section the model itself is tested to examine whether it provides a good approximation of the retrieval processes engendered by brand priming.

## Part two: testing the model of priming effects

While the model (Figure VIII-1) describes retrieval processes at the individual level, in this experiment the data on retrieval probabilities is available at the aggregate level. Thus the implications of the model for aggregate retrieval probabilities need to be spelt out.

Three independent events could lead to the activation of a brand in memory:

A.  The situation or context operating at the time of retrieval may be sufficient for the brand to be recalled.

B.  The subcategory to which the brand belongs may be accessed, leading to recall of the brand.

C.  The brand itself may be primed leading to its recall.

If the probability of recall of brand i in each of these events is denoted by:

$P_{i,A}$ = Context or situation is sufficient for recall of brand i,

$P_{i,B}$ = Subcategory cues brand i, is sufficient for recall,

$P_{i,C}$ = Direct priming of brand i is sufficient for recall,

then probability of recall of brand i ($P_i$) can be expressed as:

$$P_i = P_i,A + P_i,B + P_i,C - P_i,A*P_i,B - P_i,A*P_i,C - P_i,B*P_i,C \quad (1)$$
$$+ P_i,A*P_i,B*P_i,C$$

$P_i,A$ is the base probability of recall of brand i, that is its a priori probability of recall, prior to any priming.

$P_i,B$ is the probability that a subcategory cue causes recall of brand i. $P_i,B$ is a product of two probabilities - the probability that the subcategory to which the brand belongs is accessed ($P_B$), and the probability that the brand is recalled, given that its subcategory is accessed ($P_{i/B}$)

$P_i,C$ is the probability that the brand is recalled, given a direct brand prime.

Some assumptions need to be made to operationalize the model:

1. Each brand (i) has a base probability of recall $= \lambda_i$

2. Once the subcategory (j) to which the brand (i) belongs is accessed, each brand in the subcategory has some base probability of recall that is a function of its strength of association to the subcategory $= \alpha_{ij}$

3. Each subcategory (j) has a base probability of being accessed due to its strength of association to the product class $= \beta^0_j$

In addition, when a brand is primed it:

4. increases the probability of recall of that particular brand by a fixed amount $= \theta$
   This assumes that the facilitating effect of a brand prime is constant for all brands.

5. increases the probability that the subcategory to which it belongs is accessed to $= \beta^1_j$

This assumes that all brands in a particular subcategory (j) have the same facilitating effect on accessibilty of that subcategory.

6. decreases the probability that the contrast subcategory is accessed to $\beta^2_j$

   Although an inhibition effect was not expected, this was tested by the model. All brands in a subcategory are assumed to have the same inhibitory effect on a contrast subcategory.

Finally the model assumes that:

7. brands are not directly associated with each other but are associated via the subcategory to which they belong (e.g., Rundus 1973).

Taking subcategory effects into account, the model in (1) may be rewritten as:

$$P_i = P_i,A + P_B*P_{i/B} + P_i,C - P_i,A*P_B*P_{i/B} - P_i,A*P_i,C - P_B*P_{i/B}*P_i,C + P_i,A*P_B*P_{i/B}*P_i,C \qquad (2)$$

where:

$P_i,A \quad = \quad \lambda_i;$

$P_i,B \quad = \quad P_B * P_{i/B};$

$P_{i/B} \quad = \quad \begin{cases} \alpha_{ij} & \text{if } i \text{ is in subcategory } j; \\ 0 & \text{otherwise.} \end{cases}$

If brand k is the brand primed:

$P_B \quad = \quad \begin{cases} \beta^0_j & \text{if no brand priming occurs;} \\ \beta^1_j & \text{if } i \text{ is in subcategory } j \text{ and } k \text{ is in subcategory } j; \\ \beta^2_j & \text{if } i \text{ is in subcategory } j \text{ and } k \text{ is not in subcategory } j. \end{cases}$

and

$$P_i,C \quad = \quad \theta \quad \text{if } i = k.$$

Testing of the model involves two separate aspects. The parameter values obtained from testing the model are interpreted in terms of the hypothesized effects of brand primes on brand retrieval. Further, the overall model is tested for goodness-of-fit to the aggregate probability data obtained in the experiment.

Based on the above discussion, the following predictions were made:

1.  $\lambda_i$ is the independent probability of recall for each brand, given only the product class cue. This parameter can be interpreted as the independent strength of association of each brand to the product class node. The value of $\lambda_i$ should be greatest for the most salient brand ( the major brand in the major subcategory) and smallest for the least salient brand (the minor brand in the minor subcategory).

2.  $\alpha_{ij}$ is the strength of association of each brand to its subcategory. The major brands in each subcategory should have larger values of $\alpha_{ij}$ than the minor brands in the same subcategories.

3.  $\beta^0_j$ is the base probability of recall of each subcategory. The value of $\beta^0_j$ should be greater for the major subcategory than for the minor subcategory.

4.  $\theta$, the facilitating effect of a brand prime should be positive, and is defined to be the same across all brands.

5.  $\beta^1_j$ is the probability of recall of a subcategory given that a brand within the subcategory is primed. Recall of a

subcategory should be facilitated when a brand in the subcategory is primed. However, the major subcategories in each product class are already high in accessibility and should benefit to a lesser degree than the minor subcategories in the product class. Thus, while $\beta^1_j$ should be larger than $\beta^0_j$, the difference between $\beta^1_j$ and $\beta^0_j$ should be greater for the minor subcategories in each product class.

6. $\beta^2_j$ is the probability of recall of the contrast subcategory, that is, the subcategory to which the primed brand does not belong. Since no priming effects are expected across subcategories, $\beta^2_j$ should be equal to $\beta^0_j$. Further, $\beta^1_j$ should be greater than $\beta^2_j$, since a brand prime within a subcategory should have a greater effect on recall of that subcategory than a brand prime outside of the subcategory.

Numerical analysis. Since the probability model outlined in (2) above is non-linear in its parameters, the SAS (1985) procedure NLIN was used for estimation. Although the final solutions were very similar, the Marquardt (1963) method was found in early runs to be more efficient than the derivative-free DUD method (Ralston & Jenrich 1979). To avoid local minima problems, multiple starting configurations were used. Once certain problems of indeterminacy were dealt with (described below), the various starting configurations converged to very similar solutions.

NLIN provided a weighted least-squares estimate of hte model parameters. The weighted residual sum-of-squares is reported as an indicator of goodness-of-fit. Although they were not explicitly maximized by the estimation procedure, appropriate R-squared statistics

have also been included. These statistics afford the familiar "percent variance" interpretation and also provide some evidence on the robustness of the estimation procedure.

Early analyses indicated some degree of multicollinearity in the data. The probability of recall of a particular brand could be accounted for either by its independent (base) probability of recall or its association to the subcategory. That is, if a brand had a high probability of recall, the model could account for this either by assigning the brand a high base probability of recall ($\lambda_i$) or by assigning it a high probability of recall, given that the subcategory is accessed ($\alpha_{ij}$). This problem led to high standard errors and some degree of indeterminacy in the solutions.

Two options were available to circumvent this problem. As the above discussion indicates the parameters of theoretical interest have to do with predicted subcategory-mediated effects on retrieval. The experiment was designed to examine the effects of priming certain brands in a subcategory on recall/choice of other brands in the subcategory. It could be assumed that all retrieval is subcategory-based, that is, a brand is not retrieved directly, but is retrieved via accessing its subcategory. Alternatively, model testing could be conducted in two stages. This was the method followed. First the $\lambda_i$'s (for each brand) were fixed at zero and all other parameters were estimated. The parameter values obtained from this run were then used as input to the next run. In this next run, the $\lambda_i$'s were allowed to vary, while all other parameter values were fixed. In all three instances (for all three product classes) this second stage did not improve the fit of the model

to any great degree. Further, with the exception of one brand, the values of $\lambda_i$ did not move away from zero in this second run.

Table VIII-13 provides an overview of the results for Fast Food Places, Burger Condiments and Alcohol Mixers respectively. For the product class of Fast Food Places, the parameters account for 94.6% of the weighted variance and 93.9% of the unweighted variance. As noted in Table VIII-13, the corresponding statistics for Burger Condiments were 94.3% (weighted $R^2$) and 93.8% ($R^2$) for Alcohol Mixers--97.7% and 96.9% respectively. It is clear that the model produced a very good fit to the data for all three product classes. However, it must be noted that fifteen parameters were being estimated with twenty data points. In the first stage of the analysis, eleven parameters were estimated, these were fixed and the remaining four parameters were then estimated. Since an examination of the obtained parameter values was the chief concern, model parsimony was sacrificed for including all parameters of interest.

The results of the numerical analysis (presented in Table VIII-13) will be discussed in terms of the effects predicted above.

$\lambda_i$ is the independent strength of association of each brand to the product class node. As discussed, due to the nature of the data, the $\lambda_i$'s were constrained to be zero in the first stage of the analysis and were only allowed to vary at the second stage. As a consequence, the values of $\lambda_i$ did not move away from zero. If we assume that most brands are not independently associated to their product class node, but are cued via accessing their subcategory, this result is quite consistent with the model.

### TABLE VIII-13

PARAMETER VALUES FOR MODELS

| | $\theta$ | $\beta^0$ | $\beta^1$ | $\beta^2$ | $\lambda$ | $\alpha$ |
|---|---|---|---|---|---|---|
| PRODUCT CLASS : FAST FOOD PLACES | 0.39 | | | | | |
| SUBCATEGORY : HAMBURGERS | | 0.92 | 0.93 | 0.93 | | |
| DELIS | | 0.50 | 0.91 | 0.53 | | |
| BRANDS : MACDONALD'S | | | | | 0.00 | 0.99 |
| WENDY'S | | | | | 0.00 | 0.77 |
| JOE'S DELI | | | | | 0.00 | 0.93 |
| SUBWAY | | | | | 0.01 | 0.32 |

Weighted $R^2 = 94.6$

$R^2 = 93.9$

| | $\theta$ | $\beta^0$ | $\beta^1$ | $\beta^2$ | $\lambda$ | $\alpha$ |
|---|---|---|---|---|---|---|
| PRODUCT CLASS : BURGER CONDIMENTS | 0.43 | | | | | |
| SUBCATEGORY : MUSTARDS | | 0.58 | 0.77 | 0.66 | | |
| PICKLES | | 0.45 | 0.84 | 0.53 | | |
| BRANDS : FRENCH'S | | | | | 0.00 | 0.86 |
| GREY'S | | | | | 0.00 | 0.47 |
| VLASIC | | | | | 0.00 | 0.64 |
| HEINZ | | | | | 0.00 | 0.41 |

Weighted $R^2 = 94.3$

$R^2 = 93.8$

TABLE VIII-13--continued

| | | $\theta$ | $\beta^0$ | $\beta^1$ | $\beta^2$ | $\lambda$ | $\alpha$ |
|---|---|---|---|---|---|---|---|
| PRODUCT CLASS : ALCOHOL MIXERS | | 0.44 | | | | | |
| SUBCATEGORY : | ORANGE JUICES | | 0.76 | 0.66 | 0.53 | | |
| | FRUITY MIXES | | 0.18 | 0.52 | 0.37 | | |
| BRANDS : | TROPICANA | | | | | 0.00 | 0.99 |
| | CITRUS HILL | | | | | 0.02 | 0.12 |
| | COCO LOPEZ | | | | | 0.01 | 0.70 |
| | HOLLAND HOUSE | | | | | 0.00 | 0.00 |

Weighted $R^2$= 97.7

$R^2$= 96.9

$\alpha_{ij}$ is the strength of association of each brand to its subcategory. As expected, for all product classes, the major brands in each subcategory have larger values of $\alpha_{ij}$ than the minor brands in the same subcategories. This result is consistent with the results of the manipulation checks reported earlier.

$\beta^0_j$ is the strength of association of each subcategory to the product class node. As expected, for all three product classes, the major subcategories are more strongly associated to their product classes than are the minor subcategories. $\beta^1_j$ is the probability that a subcategory will be accessed when a brand within that subcategory is primed. It was predicted that $\beta^1_j$ should be greater than $\beta^0_j$ for all subcategories and that the difference between these parameter values would be greater for the minor subcategories than the major subcategories. In four of the six subcategories, the value of $\beta^1_j$ is clearly greater than $\beta^0_j$. For the subcategory of hamburgers, these values are very similar. This can be attributed to the ceiling effects on retrieval of extremely salient subcategories. For all six subcategories, the difference between these values is larger for the minor subcategories than for the major subcategories. For the product classes of Fast Food Places and Burger Condiments, priming with a brand in the major subcategory has only a small facilitating effect on probability of accessing that subcategory (Hamburger Places and Mustards respectively). In both these product classes, priming with a brand in the minor subcategory has a substantially larger effect on probability of retrieval of the subcategory (Delis and Pickles respectively).

$\beta^2_j$ is the probability of accessing a subcategory when a brand in a contrast subcategory is primed. Since across subcategory effects were not expected, it was predicted that the value of $\beta^2_j$ would be equal to $\beta^0_j$ and smaller than the value of $\beta^1_j$. This is the case for four of the six subcategories. For the subcategory of hamburgers, ceiling effects again result in very similar values for these parameters. While brand priming has some positive effect on accessibility of the contrast subcategory, in each of these five subcategories, this positive effect is relatively small compared to the effect of brand priming on accessibility of the same subcategory.

For the major subcategory of Orange Juices in the product class of Alcohol Mixers, priming seems to have an inhibitory effect on retrieval. This is true both when brands in the same subcategory and brands in the contrast subcategory are primed. The within-subcategory inhibition is an effect that was unexpected and is not explained by the conceptual model of retrieval. Examination of the residuals suggests that the model has a problem dealing with the large difference in probability of retrieval between Citrus Hill and Tropicana, both in the major subcategory (see Table VIII-9). It does this by assigning a relatively high value to $\beta^0_j$ --the base probability of retrieval of this subcategory. As a result the residuals for Citrus Hill are relatively large. The across-subcategory inhibition effect occurs because priming with Holland House Margarita Mix appears to inhibit retrieval of Tropicana Orange Juice. This is the only instance of a significant inhibition effect across all three product classes. This result is probably attributable to an effect of "problem framing" (Wright & Rip 1980). Although the subcategories were not

mentioned in the priming manipulation, use of the word "Mix" within the brand name Holland House Margarita Mix may have caused subjects to think only in these terms when they were asked to choose "mixers."

As a whole, the analysis provides good support for the subcategory-based model of priming. Brand priming is seen to affect retrieval, not merely by increasing accessibility of the primed brand but also by activating the subcategory to which the primed brand belongs. Thus, when a brand is primed, through advertising or other external stimuli, it is important to consider the effects of this prime, not only on the brand itself, but on competing brands as well, especially those in the same subcategory as the primed brand.

The results of this experiment underscore the importance of examining the dynamics of retrieval processes, not merely because they influence what brands are brought to mind, but also because they influence the further probabilities of brand choice.

CHAPTER IX

GENERAL DISCUSSION AND IMPLICATIONS

This paper investigated the role of consumer memory for brands in the formation and use of a consideration set. Two "stages" were identified as having important influences on consumer choice, especially when the consumer relies on brand retrieval prior to making a choice. The first of these stages, labeled the "evocation" stage, consists of the processes whereby the consumer retrieves and includes a set of brands in a situation-specific consideration set. The second "evaluation" stage is one where he compares and evaluates brands in the consideration set in order to make a final brand choice. While the effects of brand evaluation on brand choice have been researched extensively, the effects of retrieval on brand consideration, evaluation and choice have received scant attention in consumer research. Accordingly, the three empirical studies reported in this paper sought to examine the important role of memory and retrieval on brand choice.

The results as a whole suggest that memory for brands within a particular choice occasion or context, could have important effects on brand choice for that occasion. Consequently, factors that affect consumers' memory for brands could have substantial effects on choice. The first two studies (Chapters VI & VII) examined the role of the usage-situation on brand retrieval and choice. They suggest that, in instances when the consumer relies on brand retrieval for making a "memory-based"

choice certain "cuing attributes" could be instrumental in determining brand retrieval and thereby brand choice. Importantly such cuing attributes were often quite different from the "important attributes" that consumers used to evaluate brands for choice.

The third study (Chapter VIII) considered the effect of another external influence, on memory-based choice in three separate product categories. This study examined the effect of brand cues or primes, such as those offered by advertising, on brand retrieval and choice. In all three product categories, brand priming was shown to have significant effects on choice of brands within the category. In some instances, as predicted, priming of certain less-preferred brands in a category, led to increases in the probability of retrieving and choosing a preferred competitor.

The three studies as a set highlight the important role of factors that influence brand choice, not by affecting preferences among alternatives actively considered, but merely by shaping which alternatives ever come to mind. The results suggest three important implications for research on consumer choice:

First, the outcome of a choice task will be influenced by whether it is memory-based or whether the consumer is presented with a set of brands prior to choice.

Second, the processes by which the consumer arrives at a memory-based choice will be quite different from those he uses to make a stimulus-based choice (e.g., Biehal & Chakravarti 1982, 1983, 1986). Specifically, in this paper, the attributes or cues instrumental to

memory-based brand choice may be quite different from those that are used to make evaluations in stimulus-based choice.

Third, external influences on choice will have very different effects on memory-based and stimulus-based choice. When choice is memory-based, retrieval precedes evaluation and external influences could have important effects on the retrieval and consideration of brands. Each of these implications will now be discussed in turn.

## Memory-Based vs Stimulus-Based Choice Tasks

Despite increased interest in the role of memory processes in consumer choice and judgment (e.g., Bettman 1979; Biehal & Chakravarti 1982, 1983, 1986; Lynch & Srull 1982), very little empirical work has examined the role of memory for brands themselves in determining brand choice. Yet, as discussed at the outset, it is likely that consumers faced with an increasing assortment of brands, depend on memory to a large extent, to retrieve some smaller consideration set.

The results of the experiments clearly indicate that brand choice probabilities could vary depending on whether choice is memory-based or stimulus-based. Experiment One measured choice within six separate product categories, for both memory-based and stimulus-based tasks. For all six product categories, brand choice probabilities were shown to vary between the two tasks. In Experiment Two, the value of various restaurants on specific attributes was used to manipulate their accessibility and preference. Subsequently, restaurants high in accessibilty fared better when choice was memory-based, while restaurants that were high in preference did better in the stimulus-based case. In Experiment Three, the accessibility of various brands was manipulated

across the three product categories of "fast-food places," "hamburger condiments" and "alcohol mixers." While brand preferences (and thus presumably stimulus-based choice) remained stable across all tasks, (memory-based) brand choice probabilities were shown to vary systematically depending upon the salience and (manipulated) accessibility of brands in the category. The studies underscore the importance of considering retrieval as an important determinant of choice.

Typical studies of brand choice ask consumers to choose from among a fixed set of presented brands. This method overlooks the fact that consumer choice may vary because consumers choose from a different and smaller set of brands "brought to mind" on each occasion. In consumer product categories where some percentage of choice is memory-based, it is important that choice researchers consider the effects of retrieval on brand choice. Rather than providing subjects with a set of brands to evaluate and choose from, researchers should require subjects to retrieve their own consideration sets for each purchase situation.

More importantly, it is clear from the results that researchers must consider both stages of the choice process as being important to the final choice outcome. Researchers have implicitly assumed that once consumers are aware of a brand, the choice process (if any) consists of brand evaluation and comparison with other known brands. This paper shows that an integral part of this choice process is the retrieval and inclusion of brands in some consideration set for the occasion. Further, the dynamics of such retrieval processes will often be quite different

from the factors that have traditionally been seen as influencing brand evaluation and choice.

## Retrieval vs Evaluation Processes

The process by which the consumer retrieves a set of brands for inclusion in a consideration set is, in many instances, quite different from the process by which he makes a choice from this set. While researchers have implicitly assumed that these processes are similar, there is no evidence to suggest that the cues or attributes instrumental in retrieving a set of brands is the same as those that are used to evaluate brands for choice. Experiment One provides examples of a number of cues that could be used quite differently during retrieval and evaluation. For instance, while the "novelty" of a particular gift item caused subjects to evaluate it favorably, novel gifts were less likely to be recalled than more common gifts in the product class. On the other hand, while "salty" snack foods were more likely to be brought to mind, salty snacks were less favorably evaluated by subjects.

The notion of the cuing attribute was developed in this paper and cuing attributes were defined as "the attributes that underlie brand retrieval on any particular occasion." In Experiment One the attributes that served to retrieve brands (those attributes that differentiated between brands that were retrieved and those that were not) were identified as cuing attributes. Importantly, the usefulness of attributes as cues varies depending on the situation or use for which retrieval is being undertaken. Thus for instance, the attribute of "distance" was identified as a cuing attribute in the product class of "restaurants" for the usage-situation of "going to lunch from school,"

while the attribute of "formality" cued restaurants for the usage situation of "going with your boyfriend's/girlfriend's parents to dinner." Each usage-situation is seen to activate specific attributes that then serve to retrieve brands with high values on these dimensions.

Experiment Two provided a more controlled test of the effect of cuing attributes. As discussed above, the accessibility of restaurants was manipulated in Experiment Two. This was done by assigning each restaurant a specific value on a cuing attribute for the situation. Restaurants that had high values on cuing attributes (high in accessibility) were given low values on other evaluative dimensions (low in preference) and vice versa. For both usage-situations, restaurants with high values on cuing attributes were facilitated when choice was memory-based, while restaurants with high values on the evaluative dimensions were facilitated when choice was stimulus-based. The experiment provided support for the notion that different sets of cues will drive retrieval and choice when choice is memory-based as opposed to stimulus-based.

These results have interesting implications for the effects of external influences on brand choice.

<u>External Influences</u>

As discussed previously the view of choice as a two-stage process also provides a novel perspective on the role of external influences. External influences may affect choice by activating specific brands, causing them to be included in the consideration set on a particular occasion. An individual intending to see a movie may be reminded by his friend of a movie he had not considered. A billboard or point-of-sale

display for a brand may simply serve to place the brand in the consumer's consideration set or working memory. In these instances, if this "new" brand is positively evaluated, such reminding will lead to an increase in its probability of choice. These aspects are considered in greater detail shortly.

## Usage-situations as external influence

The prevailing view of usage-situational influences is that they serve to alter the importance weights that consumers place on attributes or benefits of products (e.g., Belk 1974, 1979; Berkowitz, Ginter & Talarzyk 1977; Miller & Ginter 1979). Thus a consumer is believed to choose "Coke" "at the beach" because he _values_ its "thirst-quenching ability" for this situation while he chooses "Gatorade" after a game because he now values its ability to "provide nourishment."

The notion of the cuing attribute suggests that usage-situations may have another, different and important influence on choice. Specifically, usage situations activate certain attributes. Properties such as diagnosticity, goal relevance and intensity determine which attributes are activated in a particular usage-situation. Subsequently, brands with high values on these cuing attributes will be retrieved in that situation.

Experiment One examines brand retrieval within product classes across different usage-situations and concludes that the retrieval set varies across usage situations. As discussed, Experiment Two shows that possession of specific cuing attributes faciltates brand retrieval in usage-situations that cue these attributes.

The implications of these results for usage-situations as a segmentation tool are discussed shortly.

## Brand primes as external influence

One of the basic functions served by a variety of marketing stimuli is to prime brands. That is, they serve to activate the advertised brand in memory, render it accessible, and for a short period of time include it in the consumer's working memory at the time. The significance of this function has however, largely been overlooked.

Experiment Three demonstrates that such brand primes could have important and subtle effects on memory-based brand choice. Experiment Three examined memory-based choice in product categories (e.g, "fast food places) that had distinct subcategories - some major (e.g., hamburger places), some minor (e.g., deli's). Subjects were primed by having them answer questions about either a major brand in a major subcategory, a minor brand in a major subcategory, a major brand in a minor subcategory or a minor brand ina minor subcategory. A control group had no brands in that category primed. In all three product categories examined, priming a minor brand in a minor subcategory increased the proportion of subjects choosing one of the major brands in that subcategory (in comparison to the control condition). At the same time brand priming had no effect on relative preference for these brands. Thus brand primes were shown to have a clear effect on brand choice via brand retrieval, without any effect on brand evaluation.

The next sections will consider the implications of these findings for marketing and research on consumer behavior.

## Cuing vs Important Attributes

The paradigm that consumer choice is a function of various product attributes pervades the marketing literature. Multi-attribute choice models depict consumers as choosing between brands based on the attributes these brands possess and the evaluative importance of these attributes (e.g., Wilkie & Pessemier 1973; Lutz & Bettman 1977). Haley (1968) suggests that individuals purchase brands for the benefits they offer. Consequently, a large amount of marketing strategy that addresses the notion of brand choice, focuses on these "important" attributes as bases for differentiation. The notion of the Unique Selling Proposition emphasises the need for competitive advantage on an attribute considered important by the consumer.

Meanwhile, it appears that the role of attributes in the process of retrieval has not been given enough attention. The results of the experiments reported in this paper strongly support the notion that attributes have an important function in the retrieval stage of brand choice. Attributes that play this role have been labeled cuing attributes. Since brand retrieval engenders different processes than brand evaluation and since cuing attributes may often differ from attributes that are evaluatively important for choice, it is crucial to examine these functions of attributes separately.

Separate examination of these different roles of product attributes has important implications for strategies of segmentation and product differentiation.

## Cuing Attributes and Situation-Based Segmentation

Current attribute-based approaches to market segmentation and positioning, differentiate among customer groups based on their **preferences** for different attribute clusters (e.g., Hauser & Koppelman 1979; Johnson 1971; Shocker & Srinivasan 1979). Recent research has stressed the importance of including situational variables in any definition of market segments (Abell 1980; Dickson 1982; Wind 1977). A significant product X situation interaction obtained in most studies is taken as evidence of the fact that consumers prefer different products for different situations. Consequently it has been suggested that segments should be targeted based on the frequency with which they encounter different usage-situations and the benefits that they perceive as accruing from each. Thus a beverage such as Gatorade that provides nourishment, should be targeted at a situation-based segment that values nourishment for a particular situation.

Similar logic could be applied to the use of cuing attributes as bases for situation-based segments. However, the emphasis in this instance would not be on evaluatively important attributes, but on attributes activated by the usage-situation and used for retrieval. As discussed, the cuing attributes for a particular segment may be quite different from the attributes it considers important. This has implications for the specific messages chosen for a marketer's target segment.

## Consumer Promotions and Accessibility

It is clear that in instances when the consumer makes a memory-based choice, marketing stimuli could serve to activate and increase the

accessibility of specific information in memory. Such activation could lead to an increased probability of retrieving and choosing specific brands. Traditionally the effectiveness of various promotional alternatives (e.g., couponing, point-of-sale material) has been measured in terms of their ability to increase overall awareness of the promoted brand (e.g., Kotler 1980) and their ability to improve evaluations and increase preference for the brand (e.g., Thaler 1983). The role of consumer promotions in increasing brand accessibility has largely been overlooked. A number of aspects deserve greater attention.

First, an important role of promotions is to generate the right retrieval cues so as to increase the accessibility of the promoted brand. This dissertation examined two methods by which accessibility could be enhanced. The brand could be "primed" directly or attributes associated strongly with the brand could be primed.

Second, as mentioned above, the notion of cuing attributes has important implications for the messages that a marketer may choose to target at specific segments. While attitude towards a brand may be increased by associating it with evaluatively important attributes, this alone may not ensure that the brand will be retrieved. It is necessary for advertising to focus on the associations between a brand and the cuing attributes for the specific purchase situation if accessibility is to be enhanced. For instance, if "distance" is a cuing attribute and "price" an important attribute for restaurants in the usage-situation of lunch, a restaurant that advertises its cheap specials may be evaluated favorably but may not be remembered at the appropriate time. The restauranteur will need to ensure that consumers associate his restaurant

with being close by so that it will be brought to mind for lunch. Thus advertising would attempt to associate brands directly with cuing attributes for chosen usage-situations.

Third, the effectiveness and the appropriateness of various promotional tools will vary depending on whether they are designed to increase accessibilty or evaluation. It is likely that certain promotional methods affect choice chiefly by increasing brand accessibility, without any effect on brand evaluation. For instance, an end-aisle display is likely to increase accessibilty of the displayed brand for a consumer who has not planned her purchase prior to entering the store. If the display is not associated with any price incentive, it is unlikely to have any effect on evaluation. On the other hand, a price reduction simply posted on the shelf, might do little to increase accessibility, but is likely to have an effect on preference for an already accessible brand.

Finally, marketers must consider the effect of such promotions on the choice of competing brands. As Experiment Three showed, priming of a minor brand often favored a preferred competitor. Similarly, an end-aisle display for a specific brand will serve to increase the accessibility of other similar brands. If these other brands are preferred to the displayed one, the end-aisle display may hurt rather than help the promoted brand.

## Identifying Competitive Product Markets

Recent approaches to identifying market structures have stressed the importance of measuring competition and substitutability from the perspective of the customer (Day, Shocker & Srivastava 1979; Srivastava,

Shocker & Alpert 1984).  Brands are considered substitutable if consumers perceive them to be so.  Srivastava et.al. (1984) define a product market as the set of products judged to be substitutes within those usage-situations in which similar patterns of benefits are sought by similar groups of customers.

The two-stage model of choice suggests that when choice is memory-based, brands compete with one another for retrieval before they can compete for preference.  Thus, apart from the benefits that drive preference, the cues or attributes that facilitate retrieval would be important determinants of substitutability.

While "novel" gifts may be evaluated favorably, they are unlikely to be remembered unless they are associated with some cuing attribute for the situation.  Thus, while novelty may be an important determinant of competition in the evaluation stage, some other attribute such as "utility" may determine which brands are retrieved.  Thus competition and substitutability may be defined very differently at the retrieval and evaluation stages of the choice process.  By collapsing across these stages and viewing the choice process in terms of evaluation alone, we may lose important information on competitive advantage.

In conclusion, this paper has identified the important role of memory for brands within the brand choice process.  It suggests that when brand choice is memory-based, marketers must carefully examine the role of retrieval, separate from the process of evaluation.  Further, attention must be paid to the factors that affect brand retrieval and consideration as they are important influences on consumer choice.

DETAILED LISTING OF STIMULI AND TASKS FOR EXPERIMENT ONE

LIST OF STIMULI - PRODUCT CLASSES, SITUATIONS AND
ATTRIBUTES FOR EXPERIMENT 1

PRODUCT CLASS 1 :  RESTAURANTS

SITUATIONS:

1. "YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH"

2. "YOU ARE AT HOME AND FEELING TOO LAZY TO FIX SOMETHING FOR DINNER"

3. "IT IS LATE AT NIGHT AND YOU HAVE FINISHED DINNER"

4. "IT IS A SPECIAL OCCASION AND YOU WISH TO CELEBRATE IT"

RESTAURANTS:

| | | | |
|---|---|---|---|
| 1. | BENNIGANS | 20. | RED LOBSTER |
| 2. | MACDONALD'S | 21. | BURRITO BROTHERS |
| 3. | JOE'S DELI | 22. | PURPLE PORPOISE |
| 4. | BROWN DERBY | 23. | MELTING POT |
| 5. | STEAK & ALE | 24. | SANDPIPER |
| 6. | GREAT WALL | 25. | GODFATHER'S |
| 7. | COZZOLI'S | 26. | UNCLE'S BROWNSTONE |
| 8. | LEONARDO'S | 27. | RATHSKELLER'S |
| 9. | RAX | 28. | CLASSIC CUISINE |
| 10. | GRANNY'S | 29. | KRYSTAL'S |
| 11. | FARRAH'S | 30. | SOVERIEGN |
| 12. | COPPER MONKEY | 31. | ORANGE'N'BREW |
| 13. | DANNY'S | 32. | IT CANT BE YOGURT |
| 14. | SONNY'S BBQ | 33. | WESTERN SIZZLIN' |
| 15. | SNUFFY'S | 34. | IRONWOOD |
| 16. | HARDEE'S | 35. | SKEETERS |
| 17. | CAFE EXPRESSO | 36. | BURGER KING |
| 18. | MARCEL'S | 37. | WENDY'S |
| 19. | TROPICAL TREATS | | |

ATTRIBUTES :

| | | | |
|---|---|---|---|
| 1. | NUTRITIONAL VALUE | 6. | QUALITY OF SERVICE |
| 2. | TRAVELING DISTANCE | 7. | NOVELTY |
| 3. | AGE OF CLIENTELE | 8. | QUALITY OF ATMOSPHERE (AMBIENCE) |
| 4. | QUALITY OF FOOD | 9. | DEGREE OF FORMALITY |
| 5. | PRICE | 10. | VARIETY OF FOOD |

PRODUCT CLASS 2 : LEISURE TIME ACTIVITIES

SITUATIONS:

1. "IT IS FRIDAY NIGHT"

2. "YOU HAVE A LONG BREAK AHEAD OF YOU"

3. "IT IS SUNDAY EVENING"

4. "IT IS RAINING AND ITS MUGGY OUTDOORS"

ACTIVITIES:

1. WATCHING T.V.
2. GOING TO A PARTY
3. SLEEPING
4. TALKING ON THE PHONE
6. GOING DANCING
7. GOING TO THE BEACH,FISHING, ETC.,
8. BOARD GAMES
9. PLAYING INDIVIDUAL SPORTS
10. EXERCISING
11. GOING SKIING, SIGHTSEEING, ETC.
12. PLAYING TEAM SPORTS
13. GOING TO A RESTAURANT
14. VISITING WITH FRIENDS
15. SUNBATHING
16. COOKING
17. GOING TO A GAME
18. GOING TO A MOVIE
19. LISTENING TO MUSIC
20. DRINKING
21. DOING A HOBBY
22. READING
23. SHOPPING

ATTRIBUTES:

1. DEGREE OF RELAXATION
2. SOCIAL NATURE
3. PRICE
4. LOCATION
5. ACCESSIBILITY
6. AMOUNT OF ACTIVITY
7. AMOUNT OF TIME TAKEN
8. AMOUNT OF ROUTINE
9. EXCERCISE VALUE
10. AMOUNT OF PLANNING
11. AMOUNT OF FUN

PRODUCT CLASS 3 :  STORES

SITUATIONS:

1. "YOU NEED SOMETHING QUICKLY AND YOU HAVE TO GET IT"

2. "YOU ARE LOOKING FOR THINGS SUCH AS FIXTURES FOR THE HOUSE"

3. "YOU ARE SHOPPING FOR A GIFT FOR A SPECIAL OCCASION"

4. "YOU HAVE SOME TIME TO SPEND AND DECIDE TO GO SHOPPING"

STORES:
1.  WALMART
2.  7-11
3.  MAAS BROTHERS
4.  K MART
5.  ALBERTSONS
6.  SCOTTY'S
7.  LIL CHAMP
8.  BURDINES
9.  THE HUB
10. PIC'N' SAVE
11. ECKERDS
12. SEARS
13. JARROD'S
14. PUBLIX
15. BELK LINDSEY'S
16. RODERICK'S
17. ROBBY'S
18. ATHLETE'S FOOT
19. J.C.PENNEY'S
20. PIER 1 IMPORTS
21. WINN DIXIE
22. GORDON'S JEWELLER'S
23. ATHLETIC ATTIC
24. DONNIGAN'S
25. SPENCER'S
26. WORLD BAZAAR
27. IVEY'S

ATTRIBUTES:
1. QUALITY OF PRODUCTS          6. QUALITY OF SERVICE
2. AVAILABILITY OF PARKING      7. CONVENIENCE OF HOURS
3. WAITING TIME                 8. CONVENIENCE OF LOCATION
4. TRAVELING DISTANCE           9. ORGANIZATION IN STORE
5. VARIETY OF MERCHANDISE      10. AVERAGE PRICE OF PRODUCTS

PRODUCT CLASS 4 :  SNACK FOODS

SITUATIONS:

1.  "YOU ARE FEELING HUNGRY ON A WEEKDAY AFTER SCHOOL"

2.  "YOU ARE WATCHING T.V.  AND YOU NEED A SNACK"

3.  "YOU ARE PLANNING TO HAVE AN INTIMATE GET-TOGETHER FOR SOME FRIENDS"

4.  "YOU ARE PLANNING TO TAKE A LONG ROAD TRIP BY CAR"


SNACK FOODS:

1.  POTATO CHIPS
2.  CHHESE AND CRACKERS
3.  ICE CREAM
5.  FRUITS
6.  COOKIES, CRACKERS, ETC.
7.  NUTS
9.  CANDY
10. CHICKEN WINGS, RIBS
11. HORS'D'OEVRES
12. CAKE, PASTRY
13. PRETZELS
14. SANDWICH
15. POPCORN
16. SODA
17. PIZZA
18. FRENCH FRIES
19. BROWNIES
20. NACHOS
21. BREAD ROLLS
22. GRANOLA BARS
23. DOUGHNUTS
24  FROZEN YOGURT


ATTRIBUTES:

| | |
|---|---|
| 1.  FRESHNESS | 7.  SWEETNESS |
| 2.  MESSYNESS | 8.  NOVELTY |
| 3.  CALORIE CONTENT | 9.  CONVENEINCE OF PACKAGE |
| 4.  SALTINESS | 10. NUTRITIONAL VALUE |
| 5.  TASTE | 11. HOW FILLING IT IS |
| 6.  PRICE | 12. POPULARITY WITH OTHERS |

PRODUCT CLASS 5 : GIFT ITEMS

SITUATIONS:

1. "IT IS A CLOSE FRIEND'S BIRTHDAY"

2. "YOU WANT TO CHEER UP A FRIEND WHO IS NOT WELL"

3. "A FRIEND IS LEAVING TOWN AND GOING AWAY"

ONLY THREE SITUATIONS WERE ANALYZED FOR THIS PRODUCT CLASS. A FOURTH SITUATION - "YOU HAVE BEEN INVITED TO A FRIEND'S WEDDING" - COULD NOT BE ANALYZED BECAUSE AN INADEQUATE NUMBER OF PRODUCTS APPROPRIATE TO THIS SITUATION WERE INCLUDED IN THE STIMULUS LIST PRESENTED TO SUBJECTS.

GIFT ITEMS:

1. DINNER PARTY
2. WINE, CHAMPAGNE
3. GREETING CARD
4. FLOWERS
5. CLOTHES
6. HOUSEHOLD APPLIANCE
7. CANDY
8. STUFFED ANIMAL
9. SPORTING GOODS, GAMES
10. JEWELRY
11. BOOKS, MAGAZINES
12. SOUVENIERS, KNICKNACKS
13. BALLOONS
14. PENS, STATIONERY
15. MONEY/CHECK
16. COSMETICS, TOILETRIES
17. RECORD ALBUMS
18. TICKETS TO ENTERTAINMENT
19. FOOD

ATTRIBUTES:

1. UTILITY
2. CUTENESS
3. AVAILABILITY
4. SENTIMENTAL VALUE
5. PERSONAL NATURE
6. NOVELTY
7. EDUCATIONAL VALUE
8. PRICE
9. QUALITY IMAGE
10. CHEERFULNESS

## APPENDIX 1A -- continued

PRODUCT CLASS 6 : NON-ALCOHOLIC BEVERAGES

SITUATIONS:

1. "IT IS LUNCH TIME AND YOU NEED A DRINK WITH LUNCH"

2. "YOU ARE HAVING BREAKFAST AND YOU NEED SOMETHING TO DRINK"

3. "YOU ARE STUDYING LATE AT NIGHT AND YOU NEED A DRINK"

4. "YOU ARE PLANNING A 'WILD PARTY' FOR SOME FRIENDS"

NON-ALCOHOLIC BEVERAGES:
1.  DIET COKE
2.  COFFEE
3.  WATER
4.  GATORADE
5.  PEPSI
6.  HOT CHOCOLATE
7.  ORANGE JUICE
8.  OTHER COLAS
9.  GINGER ALE
10. ICED TEA
11. TAB
12. FRUITY SODAS
13. LEMONADE
14. SEVEN UP
15. TEA
16. APPLE JUICE
17. COKE
18. MILK
19. GRAPEFRUIT JUICE
20. SUNKIST
21. OTHER DIET SODAS
22. ROOT BEER
23. DIET PEPSI
24. SPRITE

ATTRIBUTES:
1.  TEMPERATURE SERVED
2.  STIMULATING
3.  FILLING
4.  POPULARITY
5.  ACCESSIBILITY
6.  THIRST QUENCHING ABILITY
7.  CALORIE CONTENT
8.  CARBONATION
9.  MISCIBILITY WITH ALCOHOL
10. CONVENIENCE OF PACK
11. SWEETNESS
12. HEALTHFULNESS
13. PRICE
14. COMPATIBILITY WITH FOOD

APPENDIX IB-1

TASK 1 :  ATTRIBUTE LISTING TASK

INSTRUCTIONS

In the questions on the next few pages we are interested in the characteristics or attributes that describe the products that you look for in certain choice situations.

As an example, if a couple is looking for a house they may look for attributes such as 'close to downtown', 'two bedrooms', etc.  Or more specifically, if an older couple is looking for a vacation home, they may specify attributes such as 'warm climate', 'on the lake or waterfront', and 'quiet locality'.  If a family were looking for a car, they may think of attributes such as 'washable seats', 'four door' and 'low m.p.g.'.

After the experimenter has indicated that you may begin you will have 20 seconds to think of and list the attributes that describe the products you might look for in the various product classes listed on each page.  Please stop writing when the experimenter indicates that the 20 seconds are over and please do not turn pages until you are told to do so.

When listing the attributes please be as unambiguous as possible. For instance if you were describing the attributes of a car you might buy, mentioning 'size' as an attribute will be too vague.  You need to specify what size you mean, i.e. large, medium, etc.  So try to be as descriptive as possible.

PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH.   LIST THE ATTRIBUTES YOU
CAN THINK OF THAT DESCRIBE THE RESTAURANTS YOU COULD GO TO.


ATTRIBUTES:


_____


_____


_____


PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

APPENDIX IB-2

TASK 2: STIMULUS-BASED TASK

INSTRUCTIONS

On the pages following are listed a number of products from a product class. The product class is first indicated on the top of the page. Then there is a description of a situation within which products in that product class are often used. We would like you to indicate your preference for the products listed, for the specific situation described. Rating of preference will be on an EIGHT-POINT SCALE. A rating of zero will indicate that you do not know about the product mentioned. Ratings between 1 and 8 indicate how much you prefer the product listed for the specific situation or use mentioned. Please put down the appropriate number on the blank space provided after each product. ACCURACY is very important for this task so please take as much time as you need.

Example:     Product Class: Automobiles

Description of situation: You are going on a long distance trip and want to rent a car for this purpose.

```
   0          1    2    3    4    5    6    7    8
   +          +----+----+----+----+----+----+----+
Don't       Do not                           Prefer
 know     prefer at all                     very much
```

Honda CVCC __7__

This rating of 7 indicates that you would prefer (close to very much, certainly much higher than average) to rent a Honda CVCC for the long distance trip.

PLEASE DO NOT TURN THIS PAGE UNTIL YOUR ARE TOLD TO DO SO.

## RESTAURANTS AND EATING PLACES

YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH.

```
   0          1    2    3    4    5    6    7    8
   +          +----+----+----+----+----+----+----+
 Don't        Do not                         Prefer
 know      prefer at all                   very much
```

| | | | |
|---|---|---|---|
| BENNIGANS | _____ | RED LOBSTER | _____ |
| MACDONALD'S | _____ | BURRITO BROTHERS | _____ |
| JOE'S DELI | _____ | PURPLE PORPOISE (Univ) | _____ |
| BROWN DERBY | _____ | MELTING POT | _____ |
| STEAK & ALE | _____ | SANDPIPER | _____ |
| GREAT WALL | _____ | GODFATHER'S | _____ |
| COZZOLI'S | _____ | UNCLE'S BROWNSTONE | _____ |
| LEONARDO'S (Univ) | _____ | RATHSKELLER'S | _____ |
| RAX | _____ | CLASSIC CUISINE | _____ |
| GRANNY'S | _____ | KRYSTAL | _____ |
| FARRAH'S | _____ | SOVEREIGN | _____ |
| COPPER MONKEY | _____ | ORANGE-N-BREW | _____ |
| DANNY'S | _____ | IT CAN'T BE YOGHURT | _____ |
| SONNY'S BBQ | _____ | WESTERN SIZZLING | _____ |
| SNUFFY'S | _____ | IRONWOOD | _____ |
| HARDEE'S | _____ | SKEETER'S | _____ |
| CAFE EXPRESSO | _____ | MARCEL'S | _____ |
| TROPICAL TREATS | _____ | | |

TASK 3A :  MEMORY-BASED TASK - RETRIEVAL SET

INSTRUCTIONS

In the questions on the next few pages you are required to list the products that come to mind.  Each page first gives the name of the product class we are interested in and then describes a situation in which the product is often used.

After the experimenter has indicated that you may begin you will have _20 seconds_ to list the products that come to mind.  Please list all the products that you can think of for that product class and choice occasion.  Please stop writing when the experimenter indicates that the 20 seconds are over and please _do not_ turn pages until you are told to do so.

PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

YOU ARE AT SCHOOL AND WANT TO HAVE LUNCH.  LIST THE RESTAURANTS YOU
CAN THINK OF THAT YOU COULD GO TO.

RESTAURANTS:

_____

_____

_____

_____

_____

_____

PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

APPENDIX IB-3 -- continued

TASK 3B:  MEMORY-BASED TASK - CONSIDERATION AND CHOICE SETS

As indicated in Chapter VI, once subjects had completed the retrieval set task, they were required to return to each product class and do the following:

i)   First they were asked to circle those products that they would not even CONSIDER for choice in the given situation.

ii)  Next they were asked to rank the remaining (uncircled) products in order of their preference for CHOICE in that situation.

APPENDIX IB-4

TASK 4 : BELIEF RATING TASK

INSTRUCTIONS

On the following pages we would like you to rate a number of products from a particular product class on the degree to which you believe they possess specific attributes. The rating will be on an EIGHT-POINT scale. A zero indicates that you are not familiar with the product mentioned. The specific attribute and the relevant scale on which the products are to be rated will be listed on the top of each page followed by a list of products. Please pay careful attention to each attribute and the specific scale described as they are differently described on each page. Then, against the blank space provided after the name of each product, put down the value on the scale that you believe is appropriate for that particular product. ACCURACY is very important in this task so please take as much time as you need.

EXAMPLE:          Product Class:  Automobiles

Attribute:  Miles per gallon.

```
          0        1      2      3      4      5      6      7      8
Scale:    +        +-----+-----+-----+-----+-----+-----+-----+
         Don't    Very                Just   Just            Very
         know.    low MPG.            below  above           high MPG.
                                      average average
                                      MPG.   MPG.
```

Honda CVCC    7

The rating of 7 above will mean that you believe that Honda CVCC provides close to very high miles per gallon, much higher than average.

PLEASE NOTE THAT ALL THE RATINGS ON THE FOLLOWING PAGES WILL BE ON THE <u>PRODUCT CLASS OF RESTAURANTS</u>.

```
    0          1    2    3    4    5    6    7    8
    +          +----+----+----+----+----+----+----+
  Don't       Very                          Very
  know        cheap                         expensive
```

| | | | |
|---|---|---|---|
| BENNIGANS | _____ | RED LOBSTER | _____ |
| MACDONALDS | _____ | BURRITO BROTHERS | _____ |
| JOE'S DELI | _____ | PURPLE PORPOISE (Univ) | _____ |
| BROWN DERBY | _____ | MELTING POT | _____ |
| STEAK & ALE | _____ | SANDPIPER | _____ |
| GREAT WALL | _____ | GODFATHER'S | _____ |
| COZZOLI'S | _____ | UNCLE'S BROWNSTONE | _____ |
| LEONARDO'S (Univ) | _____ | RATHSKELLER'S | _____ |
| RAX | _____ | CLASSIC CUISINE | _____ |
| GRANNY'S | _____ | KRYSTAL | _____ |
| FARRAH'S | _____ | SOVEREIGN | _____ |
| COPPER MONKEY | _____ | ORANGE-N-BREW | _____ |
| DANNY'S | _____ | IT CAN'T BE YOGHURT | _____ |
| SONNY'S BBQ | _____ | WESTERN SIZZLING | _____ |
| SNUFFY'S | _____ | IRONWOOD | _____ |
| HARDEE'S | _____ | SKEETER'S | _____ |
| CAFE EXPRESSO | _____ | MARCEL'S | _____ |
| TROPICAL TREATS | _____ | | |

APPENDIX II

DETAILED LISTING OF INSTRUCTIONS AND INFORMATION
FOR EXPERIMENT TWO

APPENDIX II-I

Instructions and Informational Brochure


In this experiment we are interested in studying how consumers acquire and learn new information about consumer products. For example a person moving to a new city is faced with a new environment which he/she needs to learn about. An important part of this environment are the various new consumer products the person may be introduced to. In this experiment we wish to study such consumer behavior with respect to restaurants.


For the experiment to be successful you must concentrate fully on the information given to you and be fully involved in the situations described. Please give the following information your full concentration and read the material or answer the questions as honestly and confidently as you can. Thank you.


This stage of the experiment requires you to make use of your imagination. A new situation will be described to you and we would like you to transport yourself to that situation. Imagine that the situation is actually happening to you and then behave as you would in such a situation. IMAGINE THAT you are enrolled in school at Ohio State University in Columbus. You are curious about the types of activities that the city offers.


An informational brochure called City Guide is put together by the Columbus Area Chamber of Commerce and contains a large amount of information on the city.

From this brochure we have selected eight restaurants, all in the University area. The following pages contain brief descriptions of each restaurant taken from the City Guide. The restaurants have however been given fictitious names so as to maintain their anonymity.

First we would like you to get as familiar as possible with the information given to you. In the next five minutes, read the information provided about each restaurant, one at a time. Try to put yourself in the shoes of a newcomer to the city, seeking information about the restaurants that you plan to visit. You will then be asked various questions about each restaurant so try to get as familiar as you can with them.

1)   NAME :    BILL'S


DESCRIPTION :


   3305 Eigth Ave.  The quality of food is acceptable, especially
if you stick to the daily fare.  We found the service at Bill's
somewhat sloppy and the order sometimes took as long as half an
hour.  The restaurant is clean and orderly but nothing special.
Bill's is eight (8) minutes away from campus.

2)   NAME :   MAX'S


DESCRIPTION :


    Intersection of Thirteenth Ave. and N. High St.  The quality of
food at Max's is just average but quite dependable.  The service is
quite adequate although Max's does have it's busy days.  Max's has a
spacious, airy and well lit dining area where the setting is
practical yet casual.  Max's is the closest restaurant to the
University campus - just two (2) minutes away.

3)   NAME :    PAT'S

DESCRIPTION :

    Chambers Circle, Chambers Rd.  The restaurant consistently maintains high quality in food and on his good days the chef turns out some delights.  The service at Pat's is pleasant and courteous. Following a Victorian theme, the decor and furnishings in the restaurant are all done in black and white, creating a atmosphere that is pleasing and formal.  Pat's is eighteen (18) minutes away from the University campus.

4)   NAME :    AMY'S

DESCRIPTION :

    11th Ave. at Worthington St.  Although no particular item can be singled out as extra special, the quality of food at Amy's is certainly above average.  Service at Amy's is adequate, and is likely to be faster if you order the items of the day.  Wooden tables and benches are arranged around the dining area to create an informal and pleasant setting.  Amy's is five (5) minutes away from the University campus.

5)   NAME :    DAN'S

DESCRIPTION :

The Village at Leonard Ave.  Dan's has excellent quality food at all times and for the discriminating person, some of 'Dan's specialties' on the menu are indeed exquisite.  The service is very prompt and courteous.  Polished wooden flooring and original brass fixtures make for an aesthetic and formal setting.  Dan's is situated fifteen (15) minutes away from the University.

6)  NAME :  SUE'S


DESCRIPTION :


    Lane Ave. at Park Plaza.  The food is usually prepared with care and on some days the restaurant features some interesting 'local' specialties.  The service at Sue's is normally quite prompt. The restaurant has a spacious interior and lots of greenery creates a cool and casual setting.  Sue's is eight (8) minutes away from campus.

7)   NAME :    ROB'S


DESCRIPTION :


    5721 Duncan St.  The restaurant has good quality food and a few specialties are quite tasty.  The service is prompt though you may have a short wait on busy days.  Rob's is tastefully decorated and a handcarved mahogany bar graces one end of the floor.  The atmosphere is formal and a coat and tie would be quite appropriate.  Rob's is twenty (20) minutes away from campus.

8)   NAME :    TED'S


DESCRIPTION :


    Intersection of Cannon Drive and 12th Ave.  The food at Ted's is not of high quality and tends to be greasy on occasion.  Although they try hard to be prompt in service, the kitchen is rather slow. The atmosphere is bright and a little loud, especially when the restaurant is busy.  Ted's is ten (10) minutes away from the University.

Now we would like you to spend a few minutes just thinking about the information you have read. For the next two minutes or so, PICTURE YOURSELF IN COLUMBUS, actively trying to learn about the restaurants available to you. Imagine that you were trying to describe these restaurants to another friend who has not heard of them. Go over the descriptions of each restaurant in your mind. Try to remember each name and then the description of each restaurant that goes with the name.

To help you with this task the next page contains a map of the Ohio State University area, with each of the restaurants marked off.

The SHADED PART is the main University area. The numbers for each restaurant correspond to the numbers against each name in the descriptions:

| | | | |
|---|---|---|---|
| 1) | BILL'S | 5) | DAN'S |
| 2) | MAX'S | 6) | SUE'S |
| 3) | PAT'S | 7) | ROB'S |
| 4) | AMY'S | 8) | TED'S |

Now take about a minute to QUICKLY go back to the descriptions and check your memories about each restaurant against the actual information provided.

APPENDIX II-2

INSTRUCTIONS FOR THE MEMORY-BASED TASK

USAGE-SITUATION 1

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOU ARE AT SCHOOL. YOU OFTEN GO OUT TO ONE OF THESE RESTAURANTS FOR LUNCH EITHER BY YOURSELF OR WITH FRIENDS OF EITHER SEX. IT IS NOW LUNCH TIME AND YOU HAVE TO CHOOSE A PLACE TO EAT.

Put down the NAME of the restaurant you would choose for Lunch.

———————————————

Now imagine that the restaurant you just chose is closed.  Put down
the name of the restaurant that would be your next choice.

_____

APPENDIX II-2 -- continued

USAGE-SITUATION 2:

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOUR GIRL / BOYFRIEND'S PARENTS ARE VISITING AND THEY WANT TO TAKE YOU OUT TO DINNER

Put down the NAME of the restaurant you would choose for this occasion.

_____

Now imagine that the restaurant you just chose is closed.  Put down
the name of the restaurant that would be your next choice.

_____

APPENDIX II-3

INSTRUCTIONS FOR THE STIMULUS-BASED TASK

USAGE-SITUATION 1

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOU ARE AT SCHOOL. YOU OFTEN GO OUT TO ONE OF THESE RESTAURANTS FOR LUNCH EITHER BY YOURSELF OR WITH FRIENDS OF EITHER SEX. IT IS NOW LUNCH TIME AND YOU HAVE TO CHOOSE A PLACE TO EAT.

For each of the following pairs of restaurants, circle the name of the restaurant that you are more likely to visit for this situation. IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF THEM. PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

|           |         |
|-----------|---------|
| PAT'S     | AMY'S   |
| DAN'S     | MAX'S   |
| SUE'S     | ROB'S   |
| AMY'S     | DAN'S   |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE
DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF
THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST
MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.


MAX'S               SUE'S


PAT'S               ROB'S


TED'S               BILL'S


MAX'S               ROB'S

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE
DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF
THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST
MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.

|  |  |
|--|--|
| PAT'S | SUE'S |
| DAN'S | ROB'S |
| MAX'S | PAT'S |
| ROB'S | AMY'S |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE
DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF
THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST
MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.


PAT'S            DAN'S


SUE'S            AMY'S

APPENDIX II-3 -- continued

USAGE-SITUATION 2

Now we would like to know which restaurant you would choose for a
particular situation.

IMAGINE THAT YOUR GIRL/BOYFRIEND'S PARENTS ARE VISITING AND THEY
WANT TO TAKE YOU OUT TO DINNER.

For each of the following pairs of restaurants, circle the name of
the restaurant that you are more likely to visit for this situation.
IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE DESCRIPTIONS
FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF THEM.  PLEASE
MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

| | |
|---|---|
| DAN'S | MAX'S |
| SUE'S | TED'S |
| AMY'S | PAT'S |
| MAX'S | SUE'S |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.

|  |  |
|---|---|
| TED'S | AMY'S |
| DAN'S | PAT'S |
| BILL'S | ROB'S |
| TED'S | PAT'S |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE
DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF
THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST
MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.

| | |
|---|---|
| SUE'S | AMY'S |
| MAX'S | ROB'S |
| PAT'S | BILL'S |
| TED'S | MAX'S |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.

|  |  |
|---|---|
| DAN'S | AMY'S |
| SUE'S | PAT'S |
| TED'S | DAN'S |
| PAT'S | MAX'S |

IT IS VERY IMPORTANT THAT YOU GO BACK AND COMPARE THE DESCRIPTIONS FOR EACH PAIR OF RESTAURANTS BEFORE DECIDING ON ONE OF THEM.  PLEASE MAKE SURE THAT YOU DO THIS FOR EACH PAIR.

PLEASE DO NOT REFER BACK TO THE PREVIOUS PAGE WHILE YOU DO THIS JUST MAKE YOUR JUDGEMENT FOR EACH PAIR INDEPENDENTLY.

DAN'S              SUE'S


AMY'S              MAX'S

INSTRUCTIONS FOR THE RETRIEVE AND CHOOSE TASK

USAGE-SITUATION 1

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOU ARE AT SCHOOL.  YOU OFTEN GO OUT TO ONE OF THESE RESTAURANTS FOR LUNCH EITHER BY YOURSELF OR WITH FRIENDS OF EITHER SEX.  IT IS NOW LUNCH TIME AND YOU HAVE TO CHOOSE A PLACE TO EAT.

Put down the names of all the restaurants that you would consider going to for this situation.

Now we would like you to indicate your preference amongst these restaurants that you have just listed. For this purpose, rank order the list above in terms of your order of preference.  That is, put a rank of 1 against the restaurant that you would most prefer for this situation, a rank of 2 to the next most preferred restaurant and so on.

APPENDIX II-4 -- continued

USAGE-SITUATION 2

Now we would like to know which restaurant you would choose for a
particular situation.

IMAGINE THAT YOUR GIRL/BOYFRIEND'S PARENTS ARE VISITING AND THEY
WANT TO TAKE YOU OUT TO DINNER.

Put down the names of all the restaurants that you would consider
going to for this situation.

Now we would like you to indicate your preference amongst these
restaurants that you have just listed.  For this purpose, rank order
the list above in terms of your order of preference.  Thatis, put a
rank of 1 against the restaurant that you would most prefer for this
situation, a rank of 2 to the next most preferred restaurant and so
on.

APPENDIX II-5

INSTRUCTIONS FOR CUED RECALL TASK

USAGE-SITUATION 1

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOU ARE AT SCHOOL.  YOU OFTEN GO OUT TO ONE OF THESE RESTAURANTS FOR LUNCH EITHER BY YOURSELF OR WITH FRIENDS OF EITHER SEX.  IT IS NOW LUNCH TIME AND YOU HAVE TO CHOOSE A PLACE TO EAT.

Given below is the list of restaurants that you just read about.  We would like you to rank these restaurants in order of your preference for this situation.  That is, give a rank of 1 to the restaurant that you are most likely to go to for lunch, a rank of 2 to the next most likely restaurant, and so on.  Ties are not allowed.  You are not allowed to look back at the descriptions for this purpose, so please keep them aside.

AMY'S

DAN'S

ROB'S

SUE'S

MAX'S

TED'S

PAT'S

BILL'S

APPENDIX II-5 -- continued

INSTRUCTIONS FOR CUED RECALL TASK

USAGE-SITUATION 2

Now we would like to know which restaurant you would choose for a particular situation.

IMAGINE THAT YOUR GIRL/BOYFRIEND'S PARENTS ARE VISITING AND THEY WANT TO TAKE YOU OUT TO DINNER.

Given below is the list of restaurants that you just read about. We would like you to rank these restaurants in order of your preference for this situation. That is, give a rank of 1 to the restaurant that you are most likely to go to for this occasion, a rank of 2 to the next most likely restaurant, and so on. Ties are not allowed. You are not allowed to look back at the descriptions for this purpose, so please keep them aside.

AMY'S

DAN'S

ROB'S

SUE'S

MAX'S

TED'S

PAT'S

BILL'S

DETAILED LISTING OF STIMULI FOR
EXPERIMENT THREE

PRIMING MANIPULATIONS


PRODUCT CLASS : FAST FOOD PLACES


STATEMENTS ABOUT TARGET BRANDS :

MACDONALD'S HAS REASONABLE PRICES
MACDONALD'S HAS ADEQUATE SEATING CAPACITY
MACDONALD'S HAS A SUFFICIENT VARIETY OF FOOD

      OR

WENDY'S HAS REASONABLE PRICES
WENDY'S HAS ADEQUATE SEATING CAPACITY
WENDY'S HAS A SUFFICIENT VARIETY OF FOOD

      OR

JOE'S HAS REASONABLE PRICES
JOE'S DELI HAS ADEQUATE SEATING CAPACITY
JOE'S DELI HAS A SUFFICIENT VARIETY OF FOOD

      OR

SUBWAY HAS REASONABLE PRICES
SUBWAY HAS ADEQUATE SEATING CAPACITY
SUBWAY HAS A SUFFICIENT VARIETY OF FOOD


PRIMED WITHIN THE FOLOWING CONTROL STATEMENTS:

SCOPE IS A BREATH FRESHENER
EXTRA STRENGTH EXCEDRIN DISSOLVES QUICKLY IN WATER
IRISH SPRING IS A LAUNDRY DETERGENT
SCOPE HAS A LIGHT YELLOW COLOR
EXTRA STRENGTH EXCEDRIN IS A GENERAL PAIN RELIEVER
IRISH SPRING HAS A FRESH, CLEAN SMELL
SCOPE HAS A MINTY FLAVOR
EXTRA STRENGTH EXCEDRIN IS AVAILABLE IN MOST DRUG STORES
IRISH SPRING HAS A RICH LATHER

APPENDIX III-A -- continued

PRODUCT CLASS : BURGER CONDIMENTS


STATEMENTS ABOUT TARGET BRANDS :

FRENCH'S MUSTARD HAS A TANGY TASTE
FRENCH'S MUSTARD IS AVAILABLE IN PLASTIC SQUEEZE BOTTLES
FRENCH'S MUSTARD IS AVAILABLE IN A NUMBER OF SIZES

       OR

GREY POUPON MUSTARD HAS A TANGY TASTE
GREY POUPON MUSTARD IS AVAILABLE IN PLASTIC SQUEEZE BOTTLES
GREY POUPON MUSTARD IS AVAILABLE IN A NUMBER OF SIZES

       OR

VLASIC PICKLES HAS A TANGY TASTE
VLASIC PICKLES IS AVAILABLE IN MIST SUPERMARKETS
VLASIC PICKLES IS AVAILABLE IN A NUMBER OF SIZES

       OR

HEINZ RELISH HAS A TANGY TASTE
HEINZ RELISH IS AVAILABLE IN MIST SUPERMARKETS
HEINZ RELISH IS AVAILABLE IN A NUMBER OF SIZES


PRIMED WITHIN THE FOLLOWING CONTROL STATEMENTS:

TIME MAGAZINE IS A NEWS MAGAZINE
TASTER'S CHOICE COFFEE IS VERY CHEAP
RUFFLES POTATO CHIPS ARE POPULAR PARTY SNACKS
TIME MAGAZINE IS AVAILABLE IN A CAMPUS EDITION
TASTER'S CHOICE COFFEE IS FREEZE DRIED
RUFFLES POTATO CHIPS COME IN MANY FLAVORS
TIME MAGAZINE HAS GOOD FILM REVIEWS
TASTER'S CHOIE COFFEE HAS A RICH, ROASTED FLAVOR
RUFFLES POTATO CHIPS ARE VERY DIFFICULT TO FIND

APPENDIX III-A -- continued

PRODUCT CLASS : ALCOHOL MIXERS


STATEMENTS ABOUT TARGET BRANDS :

TROPICANA ORANGE JUICE IS A 100% PURE FRUIT JUICE
TROPICANA ORANGE JUICE IS ALSO AVAILABLE FROZEN
TROPICANA ORANGE JUICE IS BEST SERVED COLD

          OR

CITRUS HILL ORANGE JUICE IS A 100% PURE FRUIT JUICE
CITRUS HILL ORANGE JUICE IS ALSO AVAILABLE FROZEN
CITRUS HILL ORANGE JUICE IS BEST SERVED COLD

          OR

COCO LOPEZ PINA COLADA MIX CONTAINS PURE CREAM OF COCONUT
COCO LOPEZ PINA COLADA MIX IS AVAILABLE IN CANS
COCO LOPEZ PINA COLADA MIX IS AVAILABLE IN MOST LIQUOR STORES

          OR

HOLLAND HOUSE MARGARITA MIX HAS A TART FLAVOR
HOLLAND HOUSE MARGARITA MIX IS AVAILABLE IN CANS
HOLLAND HOUSE MARGARITA MIX IS AVAILABLE IN MOST LIQUOR STORES


PRIMED WITHIN THE FOLLOWING CONTROL STATEMENTS


LEVI'S 501 BLUES ARE DESIGNER JEANS
PUBLIX IS A DEPARTMENT STORE
FROSTED FLAKES CEREALS CONTAIN MOST ESSENTIAL NUTRIENTS
LEVI'S 501 BLUS ARE VERY DURABLE
PUBLIX HAS A QUICK FRIENDLY SERVICE
FROSTED FLAKES CEREAL IS A NATURAL CEREAL
LEVI'S 501 BLUES ARE AVAILABLE AT MOST DEPARTMENT STORES
PUBLIX OFFERS A LARGE VARIETY OF FRESH PRODUCE
FROSTED FLAKES CEREAL IS A "KIDDIE" CEREAL

<u>APPENDIX III-B</u>

CHOICE SITUATIONS USED FOR EACH PRODUCT CLASS

PRODUCT CLASS : FAST FOOD PLACES

It is a weekday evening and you are at a friend's place in the vicinity of school. You decide to go to a movie that you have been wanting to see for sometime. You discover that the movie is scheduled to begin in about forty five minutes and you decide to get a quick bite before going to the theatre.

There are a number of eating places that you could go to.

Make a choice and write down the NAME of the eating place oyu choose. Make a careful choice only after imagining yourself in the situation described.


PRODUCT CLASS : BURGER CONDIMENTS

It is a lovely Sunday afternoon and you and a number of your friends have decided to barbecue some burgers. You look in the refrigerator and find that you have many of the ingredients with you. You have ketchup and mayonnaise, lettuce, onions and tomatoes.
You are going to the store to buy the meat and buns and you all decide that it would be nice to pick up one other condiment to top off your burger.

There are a number of condiments you can buy.

Make a choice and write down the BRAND NAME of the condiment that you choose. Make a careful choice only after imagining yourself in the situation described.


PRODUCT CLASS : ALCOHOL MIXERS

It is a hot summer's day and some of your friends and you are throwing a party. A few of your friends like mixed drinks, that is, they like to mix their alcohol with something else. Apart from the beer that you have bought you also want to serve some mixed drinks. After some thought, you all decide that cocktails that are cool and refreshing would be best.
You already have a full stock of sodas and some alcohol and you need to decide on the ingredients or mixers that you will buy in order to make the cocktails.

You have a number of options available to you. Remember that you already have all the soda and alcohol you require.
Make a choice and write down the BRAND NAME of the item you decide to choose to mix with the alcohol. Make a careful choice only after imagining yourself in the situation described.

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BIOGRAPHICAL SKETCH

I was born on the 27th of September, 1956 in the city of Bombay, India. Most of my primary and high school years were spent at Campion School - a private school run by the Jesuits in Bombay. I left school after nine memorable years, having completed my Senior Cambridge examination in 1972.

For the next three years, I studied at St. Xavier's College, another Jesuit institution affiliated to the University of Bombay. I graduated with a B.A. (Honours) degree in Economics and Statistics in 1976.

Having decided to pursue a career in business, I left Bombay for the Indian Institute of Management (I.I.M) Calcutta in 1976. Two years later, I obtained my Master's degree in Management from I.I.M, with specializations in Marketing and Economics.
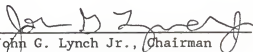
In 1978, armed with my business degree I ventured into the "real" world to gain some corporate experience. For a year I worked in the corporate planning division of Associated Cements Co.--one of India's ten largest corporations. In order to obtain more direct marketing experience, I then moved to the sales and marketing department of Cadbury India Ltd. I spent a large amount of time "in the field" learning first-hand about the dynamics of the Indian market.

Increasingly aware of the "gaps" in my theoretical knowledge of marketing, I was ready to return to school in 1981. I was admitted to the Ph.D program in marketing at the Wharton School, University of Pennsylvania and I left the shores of India for the United States.

Within a year, my research interests had become more focused, and I decided to transfer to the University of Florida. I spent three intense and fruitful years under the watchful eyes of the marketing department at Gainesville. These years witnessed my transformation into an "academic"--accepting of the fact that the gaps in my knowledge were unlikely to disappear.

In 1985 this transformation was sanctified. I joined the University of Toronto as an Assistant Professor in the Faculty of Management. I am currently at Toronto, relishing my new-found academic status.
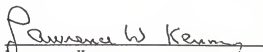
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

John G. Lynch Jr., Chairman
Associate Professor of Marketing

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

J. Wesley Hutchinson, Cochairman
Assistant Professor of Marketing

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Department of Marketing in the College of Business Administration and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August, 1987

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